

Development and Validation of the Emotional Ability Rating Scale (EARS).

by

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Abstract

Development and Validation of the Emotional Ability Rating Scale (EARS)

by Sonya N. Melnyk

Abstract: The purpose of this study was to develop and test a job analysis tool designed to assess the degree to which emotional intelligence (as defined by Mayer, Salovey, and colleagues) is required for various occupations. The Emotional Ability Rating Scale (EARS) uses behaviourally anchored rating scales (BARS) to assess the extent to which four emotional abilities (i.e., perception, understanding, facilitation, and management) are required for successful job performance. The EARS was validated using groups of participants from a range of professions. Confirmatory Factor Analyses indicated that neither a four-factor, two-factor, nor a one-factor structure fit the data well. However, the four-factor model fit better than both the two-factor and one-factor models. All four scales had excellent internal consistency. The EARS was positively correlated with two measures of interpersonal job requirements. It was also related to emotional labour and two measures of job incumbent EI. Overall, the results offer some evidence for the reliability and validity of the EARS, however, further development and evaluation is warranted.

August 24, 2006.

The Development and Validation of the Emotional Ability Rating Scale (EARS)

Emotional intelligence (EI) has been heralded as one of the most important predictors of success in a variety of life pursuits. This phenomenon began after Daniel Goleman published his first book on the concept entitled, *Emotional Intelligence: Why It Can Matter More Than IQ* (Goleman, 1995a). The popularity of EI was increased by a myriad of articles published in the popular media in the mid-1990s. In fact, Time magazine reported that "... emotions, not IQ, may be the true measure of human intelligence" (Gibbs & Epperson, 1995; p. 6). Similarly, articles published in USA Weekend magazine (Goleman, 1995b) and Fortune magazine (Farnham, Faircloth, & Carvell, 1996) endorsed Goleman's claims that EI is a central component of success in the workplace. In fact, an article in HR magazine entitled *The Smarts that Count* proclaimed that EI accounts for 80% of workplace success (Neely-Martinez, 1997).

Barrett, Miguel, Tan, and Hurd (2001) have described the media attention given to EI as "irrational exuberance" (p. 1). Although Goleman and colleagues made sensational claims regarding the contribution of EI to success (Goleman, 1995a; 1998; Neely-Martinez, 1997), other EI researchers have found important, albeit much less dramatic effects (e.g., Day & Carroll, 2004; Feyerhem & Rice, 2002; Lyons & Schneider, 2005). For example, empirical studies have suggested that EI is related to success in various professions (e.g., customer service representatives, Daus, Rubin, Smith & Cage, 2004; clerical employees, Lopes, 2004) and for various functions (e.g., leadership, Wong & Law, 2002; teamwork, Feyerhem and Rice, 2002). However, critics argue that the current literature does not substantiate the widespread use of EI inventories to predict job performance (Landy, 2005; Mayer, 1999; Palmer et al., 2001).

Nevertheless, many organizations have started using EI to inform human resource functions, such as selection, promotion, and training (Cherniss, 2005; Neely-Martinez, 1997). As Day and Kelloway (2004) reasoned, EI is only important in the work context to the extent that it is *required* to achieve workplace objectives. In other words, the concept of EI is only valuable to organizations if it is associated with job performance (e.g., it must demonstrate criterion-related validity). In order to establish the predictive utility of EI for specific jobs, organizations should be conducting independent job analyses. Therefore, the present study builds on the work by Day, Catano, and Kelloway (working manuscript), by revising and validating a job analysis tool (Emotional Ability Rating Scale; EARS) designed to assess the amount of EI required for high performance in different jobs.

Defining EI

Part of the inconsistency of findings in the EI literature may be attributed to the fact that the term “*emotional intelligence*” has multiple definitions and conceptualizations. Some definitions of EI have been criticized as overlapping with other known constructs, such as personality and/or interpersonal skills (Davies, Stankov, & Roberts, 1998; Landy, 2005; Mayer et al., 2000; Newsome, Day, & Catano, 2000). In an effort to better understand and clarify the definition of EI, Mayer et al. (2000) examined the existent literature and posited that EI has been conceptualized as two similar, but distinct constructs – a *trait-based* or *mixed model* construct and an *ability-based* construct.

Trait-based EI. The trait-based or mixed model of EI was popularized by Goleman’s best selling books (1995a; 1998). This model is comprised of personality

characteristics, moods, and motivational factors that are non-cognitive in nature (Goleman, 1995a). This definition of EI is broad, because it includes many constructs that have been linked with life success, including persistence, drive for achievement, and social skills (Mayer et al., 2000). Bar-On, another well-recognized advocate of this model, defined EI in terms of five facets, including interpersonal skills, intrapersonal functioning, adaptability, stress management, and general mood (Bar-On, 1997).

The trait-based model appeals to one's common sense, perhaps explaining its popularity in both industry and research. Given that trait-based EI is almost always assessed with self-report inventories, it is also very quick and easy to measure. Although several studies have demonstrated interesting findings using this definition of EI, trait-based EI measures tend to be highly correlated with measures of personality and other established psychological constructs (e.g., Dawda & Hart, 2000; Brackett & Mayer, 2003; Matthews, Zeidner, & Roberts, 2002; Newsome et al. 2000; Van Rooy & Viswesvaran, 2004). The lack of distinction between trait-based EI and other constructs has caused many researchers to question the usefulness of this definition of EI (Ashkanasy & Daus, 2005; Conte, 2005; Landy, 2005; Mayer et al., 2000). For example, when predicting job performance, trait-based measures do not offer any incremental validity, over and above personality measures (Barchard, 2003; Brackett & Mayer, 2003). Although some EI experts acknowledge that this construct may have applied uses (e.g., Daus & Ashkanasy, 2003), most experts agree that the current conceptualization of trait-based EI has limited use in the scientific arena.

Ability-based EI. In contrast to the trait-based model, Mayer, Salovey, and Caruso developed a model that depicts EI as a set of abilities that are relatively independent of

personality traits (Mayer & Salovey, 1997; Mayer, Caruso, and Salovey, 1999; Caruso, Mayer, & Salovey, 2003; Mayer, Salovey, & Caruso, 2000; Salovey & Mayer, 1990). Ability-based EI has been defined as the “...ability to recognize the meanings of emotions and their relationships, and to reason and problem solve on the basis of them” (Mayer, et al., 1999, p. 267). That is, EI is “...the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of the emotions, and manage them” (Mayer, et al., 1999, p. 267). According to Mayer and his colleagues (e.g., Mayer & Salovey, 1997; Mayer, Caruso, & Salovey, 1999; Mayer, Salovey, & Caruso, 2000; Mayer, Salovey, & Caruso, 2004; Salovey & Mayer, 1990; Salovey, Mayer, Caruso, & Lopes, 2003), EI is composed of four distinct *abilities*: (1) *Emotional perception* is the ability to accurately identify how oneself and others are feeling; (2) *Emotional understanding* is the ability to understand complex emotional states and to understand how emotions progress over time; (3) *Emotional facilitation of thought* is the ability to harness emotions and use them to enhance intellectual processing; and (4) *Emotional management* is the ability to regulate and control emotion in oneself and in others.

It should be noted that although the four-factor model of ability-based EI is the most supported by theory and past research (Mayer & Salovey, 1997; Mayer et al., 1999; Mayer et al, 2000; Mayer et al, 2004; Salovey & Mayer, 1990; Salovey et al., 2003), and often provides a good fit for EI data (Mayer, Salovey, Caruso, & Sitarenios, 2003; Palmer, Gignac et al., 2005; Gignac, Manocha, & Stough, 2005; Petrides & Furnham, 2000; Saklofske et al., 2003; Wong and Law, 2002), it has been proposed that EI also can be described in terms of one-factor and two-factor models (Mayer et al., 2003). In the two-factor model, the emotional perception and emotional facilitation scales collapse into

a scale called *experiential EI*, and the emotional understanding and the emotional management scales collapse into a scale called *strategic EI* (Mayer et al., 2003).

However, research is not conclusive on the validity of the one-factor and two-factor EI models (see Gignac, 2005; Mayer, Salovey, Panter, Caruso, & Sitarenios, 2005; and Mayer et al., 2003)¹.

Research has demonstrated that ability-based EI is typically not highly correlated with personality; it tends to be a distinct construct (Brackett & Mayer, 2003; Caruso, Mayer, & Salovey, 2002; Day & Carroll, 2004). Consequently, many studies have found that ability-based EI tests offer incremental validity over personality tests when predicting criteria that require emotional ability (e.g., customer service; Feyerman & Rice, 2002; public speaking performance; Lyons & Schneider, 2005). In addition, performance-based measures developed to assess EI abilities (i.e., the MSCEIT) tend to be less susceptible to social desirability responding and faking (Carroll & Day, 2004; Day, 2004), than do trait-based measures of EI. Consequently, ability-based EI has been receiving increasing support within the EI literature (Ashkanasy & Daus, 2005; Daus & Ashkanasy, 2005). Ashkanasy and Daus (2005) have acknowledged that the ability-based model developed by Mayer, Salovey, and colleagues should be considered the gold standard, stating that this model “remains the only scientifically defensible model of emotional intelligence” (p. 446). Therefore, in this study, the EARS will be developed based on the ability-based model of EI.

¹ Mayer et al., (2003) found that both the one-factor, two-factor, and four-factor structures fit MSCEIT data well, but when Gignac (2005) reanalyzed the same data, he found that only the four-factor structure was a good fit. Mayer et al., (2005) reported that this difference was due to different versions of AMOS software used to analyze the data (i.e., AMOS 4.0 vs AMOS 4.02)

Measurement of ability-based EI.

Mayer and his colleagues' efforts to measure ability-based EI have most recently culminated in the creation of the Mayer, Salovey, and Caruso Emotional Intelligence Test V2.0 (MSCEIT; Mayer, Salovey, & Caruso, 2002). The MSCEIT is comprised of eight different tasks that were designed to assess the four EI abilities and generally demonstrates adequate psychometric properties (Conte, 2005; Mayer, et al., 2002). The MSCEIT yields a total EI score, two *area* scores (i.e., experiential EI and strategic EI), and the four EI ability *branch* scores (i.e., emotional perception, emotional understanding; emotional facilitation; emotional management).

The MSCEIT is acknowledged for being the only tool that attempts to objectively measure EI (Ashkanasy & Daus, 2005; Goldenberg, Matheson, & Mantler, 2006). However, critiques have argued that it is not a truly objective ability measure because several of its tasks rely on *knowledge* of EI, rather than *actual* ability (e.g., Day, 2004; Lopes et al., 2005). For example, the MSCEIT tasks that are designed to tap into the emotional management involve various scenarios to which the participants must respond by selecting the emotional management strategy that would be most effective. Participants may *know* how to effectively manage emotions (i.e., select the correct answer on the test), but they may not actually *engage* in the most effective management strategies (Day, 2004). Therefore, although this test may be more objective than a purely self-report inventory, it may not be as objective as a traditional ability-based intelligence test.

Other researchers have developed measures based on Mayer and Salovey's conceptualization of EI (e.g., Schutte et al., 1998; Wong & Law, 2002; Tett, Fox &

Wang, 2005). For example, the Schutte Emotional Intelligence Scale (SEIS; Schutte et al., 1998) is a 33-item self-report scale that has received much attention. Its short length makes it an easy measure to administer, which may explain its recent popularity in research and practice. Although the scale was developed based on Salovey and Mayer's (1990) model of EI, Schutte et al. (1998) claimed that the SEIS has a one-dimensional structure. However, subsequent studies have identified a four-factor structure that corresponds to the MSCEIT's four-factor model (e.g., Gignac et al., 2005; Petrides & Furnham, 2000; Saklofske et al., 2003). The SEIS is related to other constructs that have been suggested to be associated with EI, such as positive coping styles and decreased depressive affect (Goldenberg et al., 2006; Saklofske, Austin, & Minski, 2003). However, recent studies have found that the MSCEIT and the SEIS were not related (Brackett & Mayer, 2003; Goldenberg et al., 2006).

In an effort to provide a practically useful measure of EI, and to remedy some of the criticisms of the SEIS and other EI measures, Wong and Law (2002) created the Wong and Law Emotional Intelligence Scale (WLEIS). This 16-item, self-report inventory has four scales that theoretically correspond with the four abilities proposed by Mayer and Salovey (1997), and the scales tend to be reliable (Wong & Law, 2002). Moreover, the WLEIS is positively correlated with life satisfaction and negatively correlated with powerlessness. The relationship between the WLEIS and MSCEIT and between the WLEIS and the SEIS have not been evaluated.

It should be noted, however, that the items designed to tap into Mayer and Salovey's (1997) conceptualization of emotional understanding (e.g., Wong & Law's *Self-emotion appraisal* scale) may not thoroughly assess an individual's ability to

understand the impact of emotions and their progression over time. Items such as “I have a good understanding of my own emotions,” and “I really understand how I feel” may only provide a superficial assessment of an individual's true capacity to understand emotions. In addition, items designed to tap into Mayer and Salovey's (1997) conceptualization of emotional management (e.g., Wong & Law's *Regulation of emotion* scale) only assesses an individual's ability to manage his/her own emotions; the scale does not assess an individual's ability to manage the emotions of others.

It is important to note that that the MSCEIT is the only test that attempts to objectively measure EI performance (Goldenberg et al., 2006). The WLEIS and the SEIS are self-report measures, which may be susceptible to social desirability responding and faking (Brackett & Mayer, 2003; Day, 2004). In fact, although the SEIS and the WLEIS have been developed based on the ability model, the self-report nature of these scales has prompted many researchers to argue that these scales should be classified as trait-based measures of EI (Perez, Petrides, & Furnham, 2006; Petrides & Furnham, 2000; Saklofske, Austin, & Minski, 2003). Lopes, Cote, and Salovey (2006) reported that the MSCEIT often yields much different results than self-report measures of EI (i.e., WLEIS and SEIS). Despite these criticisms of the WLEIS and SEIS, they were included in this study (in addition to the MSCEIT) because they are theoretically designed to tap into the ability-based model of EI.

Ability-based EI & Job Performance

In order for an EI job analysis tool to be of value to organizations, EI must be related to job success. Theoretically, it seems plausible that perceiving, understanding, and managing emotions are related to job performance, especially when the job requires

successful interaction with colleagues, clients, and/or customers. Indeed, some research has suggested that ability-based EI may be related to criteria required for successful job performance in terms of a variety of criteria, such as leadership, social interaction, and teamwork (Feyerherm & Rice, 2002; Lopes, Brackett, Nezlek, Schutz, Sellin, & Salovey, 2004; Lopes, Salovey, Cote, & Beers, 2005; Lopes, Salovey, & Straus, 2003; Wong & Law, 2002; Wong, Law & Song, 2004).

Leadership. Many researchers have theoretically linked leadership (specifically transformational leadership) to emotional abilities (e.g., Daus & Ashkanasy, 2005; Day et al., 2002; George, 2000; Humphrey, 2002), and recent studies have empirically tested this link. For example, Palmer et al. (2001) found that the ability to monitor and manage emotions in oneself and others (as measured by the Trait Meta Mood Scale; Salovey et al., 1995) was related to two components of transformational leadership (i.e., inspirational motivation and individualized consideration).

Wong, Law, and colleagues have also examined the link between the WLEIS and leader performance (Wong & Law, 2002; Wong, Law & Song, 2004). Wong and Law (2002) examined the impact of leader EI on subordinates' job performance, job satisfaction, and display of organizational citizenship behaviours (OCBs). Although leader EI did not predict job performance of subordinates, it predicted subordinates' level of job satisfaction and the amount of OCBs. Therefore, a leader's success, as measured by the satisfaction and well-being of his/her subordinates, may be related to EI (Wong & Law, 2002). Wong, Law, and Song (2004) looked at the impact of front-line supervisors' EI on their task and contextual performance in a cigarette factory in Hong Kong. Peer ratings of EI for these supervisors accounted for more than 10% of peer ratings of the

supervisors' task performance and contextual performance, even after controlling for personality.

Social interaction. Several studies have found that people who are good at managing their emotions are better at negotiating social interactions (e.g., Lopes et al., 2005, 2004; Lopes et al., 2004). For example, undergraduate students who had high emotional management abilities, as measured by the MSCEIT, were more likely to be viewed in a positive light by their peers, even after controlling for personality (Lopes et al., 2005). In addition, both self-reports and peer-reports indicated that these high EI individuals displayed higher interpersonal sensitivity and more pro-social behaviours (Lopes et al., 2005). Individuals with high emotional management abilities also perceived themselves as more successful in impression management when interacting with individuals of the opposite sex (Lopes et al., 2004). Taken together, these studies illustrate how EI (and emotional management in particular) may be beneficial when dealing with colleagues and clients in an organizational setting.

Teamwork. Team performance may also require ability-based EI. Emotional understanding and emotional management, as measured by the MSCEIT, contributed to team performance in the customer service industry (Feyerhem & Rice, 2002). One's ability to understand emotions and manage emotions in oneself and others was correlated with increased customer service ratings. Managing emotions in others and self also was correlated with overall ratings of team performance (Feyerhem & Rice, 2002).

Emotional Labour and the EI-Performance Relationship

Although some studies have demonstrated the association between EI and performance, other studies have failed to find a relationship (e.g., Barchard, 2003;

O'Connor & Little, 2002). For example, O'Conner and Little (2002) and Barchard (2003) found that EI was a poor predictor of academic performance. Specifically, Barchard (2003) found that cognitive ability and personality were more predictive of academic performance (i.e., GPA), than was EI (as measured by the MSCEIT).

One reason for the lack of significant results may be that the EI-performance relationship has been found to be moderated by *emotional labour*, such that the relationship is stronger for those jobs or tasks that require more emotional labour (Wong & Law, 2002). *Emotional labour* is a construct that was first defined by Hochschild (1983), and it refers to the extent to which employees are required to exhibit an appropriate emotion in order to successfully perform his/her duties (Hochschild, 1983). Thus, employees who possess high EI may perform better in jobs that require a lot of emotional labour, compared to those employees who possess lower levels of EI. For, example, jobs that require a high degree of social interaction (e.g., police officers, counselors, customer service, nurses, lawyers; Daus and Ashkanasy 2005) tend to require a high degree of emotional labour, and thus performance in these jobs benefit from a high EI. However, EI is not as important to job performance in jobs that do not require a great extent of emotional labour.

Similarly, Landy (2005) suggested that researchers should not expect to find relationships between EI and job performance criteria that are not theoretically linked to EI. Thus, the lack of relationship between EI and performance, in studies that use a performance criterion that does not require a great degree of emotional labour or EI (i.e., GPA), is not surprising. Therefore, in the present study, a job performance measure with an emphasis on interpersonal interaction and team work was used as a criterion.

Overall, the literature suggests that “ability-based” EI may be associated with successful job performance, at least in professions that require interaction with others (Daus & Ashkanasky, 2005). Knowing that EI is pertinent to performance in a profession is valuable from a recruitment, selection, and promotion standpoint. Assessing employees’ EI abilities may provide incremental validity to the prediction of job performance, thus enabling employers to make better selection and placement decisions. Many employers are already using EI measures to predict performance (Cherniss, 2005; Neely-Martinez, 1997). There is danger, however, in using EI for selection and promotion decisions if the employer has not demonstrated that EI is required for performance in the specific occupation. A thorough job analysis is one way of demonstrating this relationship.

Job Analysis

Tests and inventories used for the purpose of selection and promotion must have evidence supporting their job-relatedness to ensure organizations make valid personnel decisions that withstand judicial scrutiny (Society for Industrial and Organizational Psychology, Inc., 2003). A rigorous job analysis can be used to ensure that selection and promotion criteria are pertinent to job performance *and* are legally defensible (Catano, Weisner, Hackett, & Methot, 2005). Job analysis is a systematic process in which specific job-related knowledge, skills, abilities, and other attributes are defined (Catano et al., 2005). Several standardized job analysis techniques are available, each with their own strengths and weaknesses (see Catano et al., 2005; Gatewood & Feild, 2002; Levine, 1983, for reviews).

Job Analysis and EI

Despite the multitude of job analysis techniques available and the recent interest in EI, there is no “off-the-shelf” job analysis tool specifically designed to assess the extent to which ability-based EI is needed in the workplace. There are, however, some standardized job analysis tools that measure interpersonal job requirements that may involve EI. For example, the Position Analysis Questionnaire (PAQ; McCormick, Jeanneret, & Mecham, 1989) has a section entitled “Relationships with Other People” and the Common Metric Questionnaire (CMQ; Harvey, 1993) has a section entitled “Contacts with People.” Furthermore, the Work Profiling System (WPS; SHL Group, 1999) assesses attributes such as “Complex Management Skills”, “Personality,” and “Team Role,” and the Functional Job Analysis (FJA; Fine, 1988) requires SMEs to rate tasks on the way and the extent to which the job requires interaction with “People.” All of these standardized job analysis scales measure skills, abilities, and other job attributes that may be indirect and partial indicators of the EI requirements of a job. However, none of the standardized job analysis scales assess emotional ability requirements directly.

Another means of identifying job requirements for job analysis purposes is through the Occupational Information Network (O*NET; Peterson & Jeanneret, 1997). O*NET is a job analysis database that provides comprehensive research-based information about job requirements (<http://www.onetcenter.org/overview.html>). O*NET was developed in the United States to replace the Dictionary of Occupational Titles (DOT), with the intention of creating a standardized, accessible, and reliable source of occupational information (<http://www.onetcenter.org/overview.html>). O*NET provides information about the skills, abilities, knowledge, tasks, work activities, work context,

required experience levels, job interests, and work values/needs that are relevant to a job. O*NET ratings are obtained from job analysts and hundreds of randomly sampled job incumbents throughout the United States (<http://www.onetcenter.org/faqDatabase.html>). This tool is useful because it enables job analysts to collect job relevant data before conducting specific job analysis. Like the other standard job analysis tools, O*NET provides information on several of the skills and work activities that could be argued to involve EI (e.g., social perceptiveness, negotiation, developing and building teams). Although it does not directly provide information about emotional ability as a job requirement, it can be used to help validate a measure that would assess the emotional ability requirements of jobs.

Emotional Ability Rating Scale (EARS).

Given the interest in and use of EI measures in organizations, and given that no standardized job analysis tool exists to measure the EI requirements of jobs, it would be valuable to develop such a tool. The EARS was originally created by Day et al. (working manuscript; see Appendix A for the original scale) to assess EI requirements of jobs. It was structured after the Fleishman Job Analysis Survey (F-JAS; Fleishman, 1992) and is based on the ability-based conceptualization of EI (e.g., Mayer & Salovey, 1990; Mayer & Salovey, 1997). The format of the EARS is similar to the F-JAS, which is a worker-oriented job analysis technique which uses ability rating scales to determine the extent to which various general abilities are required for certain jobs (Catano et al., 2005). Moreover, the F-JAS is not designed to assess knowledge, skills, or other job attributes (Catano et al., 2005) and uses behaviourally anchored rating scales to help raters

objectively rate each ability (Fleishman, 1992). The EARS reflects both of these characteristics of the F-JAS.

The original EARS required raters to use four ability rating scales to rate the extent to which each of the emotional abilities (i.e., emotional management, emotional perception, emotional understanding, and emotional facilitation) are required to perform a job. The ability-rating scales ranged from one to seven (1 = low ability; 7 = high ability) and had four to five behavioral anchors on each scale (e.g., for the emotional perception scale, 1= “recognizing anger when someone explicitly states that they are mad”; 4= “identifying that a non-verbal critical care patient (e.g., a young child or a stroke patient) is in pain”; 5= “distinguishing among similar emotional states in colleagues (e.g., anger versus frustration)”; and 7 = “identifying a therapy client’s true emotional state even when they actively attempt to hide their feelings.”)

The EARS also requires raters to rate the *importance* of each emotional ability for job performance, the *frequency* that each ability is used on the job, and the degree to which each ability distinguishes between *superior and average* performance. These additional items provide a more comprehensive understanding of the EI requirements of jobs.

Developing a Valid Job Analysis Tool

The goal of this project was to develop further and validate the existing version of the EARS. When developing a job analysis measure, as with any other measurement tool, it is imperative to ensure that it is both reliable and valid (Peterson & Jeanneret, 1997). Internal reliability is important, as it assesses the degree to which the items of a scale are

interrelated (Schmitt, 1990). That is, internal reliability assesses how consistently individuals respond to the items within the same scale (Schmitt, 1996).

The reliability of a test impacts the extent to which it can be valid (Murphy & Davidshofer, 1994). A test is valid to the extent that it actually measures the construct it purports to measure (Nunnally & Bernstein, 1994). Therefore, if a test is inconsistent in its measurement (i.e., has poor reliability), by definition it can not have good validity. Furthermore, it is possible for a test to consistently measure something different than what it was intended to measure; therefore reliability is necessary, but not sufficient, to establish validity (Murphy & Davidshofer, 1994).

Several strategies can be used to establish the validity of a test. We can ensure that the test adequately samples the domain in question throughout the development process (i.e., through content validation strategies; Crocker & Algina, 1986). This validation strategy includes consulting the literature on the construct, designing items that tap into all aspects of the content domain, and seeking guidance from subject matter experts (Crocker & Algina, 1986). We can also examine the test's theorized internal structure and its relationship with other constructs (i.e., through construct validation strategies; Crocker & Algina, 1986). More specifically, evidence for validity is provided when a test comprises the same number of factors as the theoretical construct it is intended to measure, and when a test correlates with theoretically related constructs (i.e., convergent evidence) and does not correlate with theoretically unrelated constructs (i.e., discriminant evidence; AERA, APA, & NCME, 1999; Nunnally & Bernstein, 1994).

Despite these various methods of establishing validity, it is important to note that validity is a unitary concept that should be substantiated by multiple types of evidence

(American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999; Crocker & Algina, 1986; Cronbach, 1971). For example, evidence based on the test content, evidence based on internal structure, and evidence based on relations with other variables all lend credence to the validity of a test (AERA, APA, & NCME, 1999).

Summary and Hypotheses

EI is gaining recognition for its potential role in employee selection, training, and promotion. However, although recent research links EI to job-performance, EI may not be necessary for successful performance in all jobs. Therefore, it is important that organizations have a means of assessing the extent to which specific EI abilities are required for various jobs. Therefore, the purpose of this study was to: (1) refine the Emotional Ability Rating Scales (EARS), a job analysis measure designed specifically to assess EI ability, and (2) validate this measure in terms of its reliability and validity. In order to refine the EARS, content validation procedures suggested by Crocker and Algina (1986) were followed. In order to validate this measure, several specific hypotheses were explored.

If the EARS is a valid measure, it should have the same internal structure as the EI construct it is theorized to measure. That is, given that the EARS was developed based on the ability-based model of EI, which is most commonly theorized to have four dimensions, the EARS should cluster into four reliable factors. In addition, because it has also been theorized that EI can be described in terms of a one-factor and a two-factor model (e.g., Mayer et al., 2003), the EARS should also fit these models (but not as well as the four-factor model). Therefore, it is hypothesized that:

Hypothesis 1a: The EARS will fit a four-factor, two-factor, and a one-factor model, and the four factor model will provide the best fit.

Hypothesis 1b: All of the factors of the EARS will demonstrate high internal reliability.

Furthermore, if the EARS is a valid measure, it should be related to other constructs with which it is theoretically associated (i.e., convergent validity evidence), and should not be related to constructs with which it is not theoretically associated (i.e., discriminant validity evidence; AERA, APA, & NCME, 1999). To assess convergent and discriminant validity in this study, I examined the relationship between the EARS and four other constructs.

First, several standardized job analysis tools assess “interpersonal” job requirements (e.g., mentoring, negotiating, coaching), which *should* be related to EI, and more “data-oriented” job requirements, which *should not* be related to EI (e.g., reading, typing, analyzing). Therefore, theoretically, the EARS should demonstrate a stronger relationship with the “interpersonal” job requirements and should demonstrate a weaker relationship with the “data-oriented” job requirements. Similarly, job requirements theorized to involve EI (i.e., “interpersonal” job requirements) should account for more of the variance in the EARS, than other job requirements theorized to involve little EI (i.e., “data-oriented” job requirements). If “interpersonal” job requirements do not account for a greater portion of the variance in the EARS than “data-oriented” job requirements, then the association could be simply due to overall job complexity. Therefore, it is hypothesized that:

Hypothesis 2a: The correlation between the EARS and “interpersonal” job requirements (i.e., convergent validity evidence) will be stronger than the relationship between the EARS and data-oriented job requirements (i.e., discriminant validity evidence).

Hypothesis 2b: “Interpersonal” job requirements will account for incremental variance in the EARS, over “data-oriented” job requirements.

Second, the EARS should theoretically be related to interpersonal scores on O*NET. O*NET provides scores indicating the extent to which several skills and work activities are required for performance in different jobs. Several of these skills and work activities require interpersonal interaction and their scores can be combined to yield an Interpersonal Skills Score for each job. Because interpersonal interaction involves EI abilities (Lopes et al., 2004; Lopes et al., 2005, Schutte et al., 2001) the EARS should also be related to this O*NET Interpersonal Skills Score. Therefore, it is also hypothesized that:

Hypothesis 3: Ratings on the EARS will positively correlate with the Interpersonal Skills Score generated for each job via O*NET.

Third, assuming that employees possess skills and abilities, similar to the skills and abilities required by their job, the amount of ability-based EI possessed by the job incumbent should correlate with the amount of ability-based EI required for their job. Therefore it is hypothesized that:

Hypothesis 4: Ratings on the EARS will positively correlate with the job incumbents’ level of EI, as measured by the MSCEIT, the WLEIS, and the SEIS.

Fourth, the EARS should theoretically be related to emotional labour. Emotional labour refers to the extent to which employees are required to display appropriate emotions as a part of their job (Hochschild, 1983). Therefore, emotional labour is similar to the emotional management dimension of ability-based EI that entails regulating emotion in oneself and in others (e.g., Salovey et al., 2003). Consequently, high emotional management may be required in order for employees to be able to display appropriate emotions. The ability-based model of EI is viewed as a continuum on which emotional management is the most complex of the emotional abilities (Mayer & Salovey, 1997). Therefore, it seems logical, that in order to be able to accurately manage emotions, one would also have to be adept at perceiving, understanding, and using emotions. Accordingly, emotional labour job requirements should be related to emotional management and possibly other EI job requirements.

Therefore, it is hypothesized that:

Hypothesis 5: Ratings on the EARS will positively correlate with emotional labour.

The EARS also may “behave” similarly to emotional labour in terms of its relationship with other constructs. Given that emotional labour has been found to moderate the relationship between EI and job performance (Wong & Law, 2002), it is expected that the emotional ability requirements of a job, as measured by the EARS, will also moderate the relationship between EI and job performance. This relationship is of practical importance because if employee EI systematically improves job performance, regardless of the emotional requirements of the jobs, then organizations should always aim to hire individuals who possess high EI. However, if job performance is only

enhanced by EI to the extent that it is a requirement of the job, then using a tool such as the EARS to assess the emotional ability requirements of a job is valuable.

Hypothesis 6: The relationship between EI and job performance will be moderated by scores on the EARS, such that the relationship between EI and job performance will be stronger for jobs that score high on the EARS.

Method

This study consisted of two phases: In Phase 1, the EARS items were reviewed and further modified, and in Phase 2, the EARS was validated using a sample of workers from various occupations.

Phase 1 - Scale Development

The test development process delineated by Crocker and Algina (1986) was used to further develop the EARS. The original version of the EARS was reviewed for content, clarity, and ease of use. Small changes were made to the formatting and several items were added. To enhance the validity of the EARS through content-based strategies, a focus group was conducted with six SMEs to review the revised version of the EARS. These SME's consisted of first and second year Industrial/Organizational Psychology Masters students who had studied the construct of ability-based emotional intelligence. At the beginning of the focus group, each SME was asked to complete a "sort-task." SMEs were given the definitions of the four emotional abilities (i.e., perception, understanding, facilitation, management) and an envelope filled with behavioural anchors. SMEs were asked to sort each behavioral anchor according to the emotional ability and the level of ability it represented (1= low ability; 7= high ability). After each

individual sorted the items, the group discussed the placement of each of the behavioural anchors. All items were mapped onto the correct emotional abilities and there was very high agreement among the raters as to where the items should be placed on the scale. When SMEs differed in their placement of a particular item, the item was discussed and consensus was reached. There were very few changes to the original order of the items and none of the items moved more than two places on the 7-point scale. Based on SMEs' suggestions, some items were reworded to enhance clarity.

After the modifications suggested by the focus group had been made, the EARS was reviewed by three additional SMEs (i.e., faculty member; PhD student; I/O practitioner) in terms of the content and overall clarity. These SMEs were located across Canada and all conducted research in the area of emotional intelligence. Based on the feedback from these SMEs, a few changes were made to the wording to ensure that the definitions of the emotional abilities and the items were clear. In the original version of the EARS that was sent to the SMEs, a 7-point scale was used to measure each emotional ability, but there were only four-five behavioural anchors placed on each scale, as is the typical format of F-JAS scales (see Fleishman, 1992). However, several SMEs commented that this format was confusing; they said that it appeared as if behavioural anchors were missing. It is possible that SMEs found the scale confusing because of the way it was presented when transferred to a web-based format.

In order to improve the clarity of the scale and ensure that participants would not find it confusing, the EARS was modified such that the 7-point rating scale was changed to a 5-point rating scale, with each point on the scale having its own behavioural anchor. Additional items were created for the scales that previously had only four anchors. These

items were reviewed by additional SMEs for content and placement (see Appendix B). It should be noted that the change in the structure of the rating-scale departs from Fleishman's conceptualization of an "ability-rating scale". The rating scale used in the current version of the EARS is better described as a behaviourally-anchored rating scale (BARS).

Phase 2 - Validation Procedure

After the development and refinement phase, the EARS was tested with participants from a wide variety of occupations.

Participants

Diedorff and Wilson (2003) argued that although professional job analysts produce the best job analysis results, job incumbents who are most familiar with the job tend to produce the next best results (Diedorff & Wilson, 2003). Due to the introspective nature of this particular job analysis, it was anticipated that job incumbents would produce more accurate results than professional job analysts. Therefore, job incumbents were used in the current study.

A total of 350 participants were recruited for this study (146 male, 202 females). Thirty-one participants were recruited directly by the researcher, and three hundred and nineteen participants were recruited through the StudyResponse Project. The StudyResponse Project is a not-for-profit program that facilitates online research by distributing email participation requests to adult volunteer research participants (<http://istprojects.syr.edu/~studyresponse/studyresponse/index.htm>). A multivariate analysis of variance was used to explore differences between these two groups (i.e., researcher-recruited participants and StudyResponse participants) on the study variables.

The two samples did not differ in terms of sex, age, seniority, hours spent interacting with others, job performance, emotional labour, EI as measured by the SEIS, or EARS ratings. The groups did, however, differ slightly in their EI, as measured by the WLEIS ($F(1, 194) = 6.03, p < .05$) and their EI, as measured by the MSCEIT ($F(1, 194) = 6.70, p = .01$). The sample recruited from the researcher had higher EI (WLEIS $M = 5.74$; MSCEIT $M = 102.27$) than the sample recruited via Study Response (WLEIS $M = 5.42$; MSCEIT $M = 91.85$). However, the pattern of correlations among the study variables was similar across the two groups, with the exception of the correlations between employee EI as measured by the MSCEIT and the EARS. The relationship between these two variables was stronger in the sample that was recruited by the researcher. Examination of the scatterplot suggested that this correlation was an artifact of a few “extreme” scores that artificially inflated the correlation, given the small sample size.

The StudyResponse population from which we sampled consisted of 49% US residents and 51% non-US residents (e.g., Canadian, European, Australian).² All participants recruited directly by the investigator were Canadian. Most of the participants identified themselves as Caucasian (79.10%); however, there were several participants who identified themselves as Black (14), Hispanic (8), Asian (31), Native Canadian/American (5), and Other (14). Participants ranged in age from 19 to 81, with a mean age of 38.50 and all were employed. All of the participants with the exception of one completed high school, 59.0% had started or completed college or university programs, and 21.4% had started or completed graduate or professional programs.

² StudyResponse provided general demographics for their entire sample. The percentages for country of residence for the specific sample used in this study are unknown.

Job information provided by the participants was classified into O*NET job categories. One hundred and forty-four O*NET job categories were represented, including family and general practitioners, preschool teachers, police detectives, truck drivers, sheet metal workers, electrical engineers, and cooks. The most common job categories were: general and operations managers (13), secretaries (12), computer programmers (8), and bookkeeping, accounting, and auditing clerks (8; see Appendix G for a complete list of participant O*NET job categories). Job experience ranged from one month to 42 years, with a mean of 8.76 years. Participants reported spending 0 to 18 hours per day interacting with people while doing their jobs. The mean time spent interacting with people was 6.55 hours per day.

Only 199 of the 350 participants completed the MSCEIT. A multivariate analysis of variance revealed that the group of participants who completed the MSCEIT did not differ from the group who did not complete the MSCEIT in terms of age, seniority, hours spent interacting with others, job performance, emotional labour, EI (as measured by the WLEIS and the SEIS), or EARS ratings. The groups did, however, differ slightly in their sex composition ($F(1, 342) = 11.12, p < .01$). There were more females in the group who completed the MSCEIT (65%) than in the group who did not complete the MSCEIT (48%), suggesting that females were more likely to complete the MSCEIT. This finding is consistent with previous research that suggests response rates tend to be higher for females than males (Gannon, Nothorn, & Carroll, 1971).

Measures

Participants responded to an on-line survey that consisted of the following measures:

Demographics. Participants were asked to indicate their age, gender, ethnicity, seniority, job title, job description, highest level of education, and number of hours a day spent interacting with people.

Emotional Intelligence Job Requirements. The Emotional Abilities Rating Scale (EARS) scale was developed in order to assess the EI requirements of jobs. The EARS was designed to measure the four components of EI proposed by Mayer and Salovey (1997): emotional perception, emotional understanding, emotional facilitation, and emotional management. Each of these four subscales included four items that assessed: (1) the *extent* to which their jobs require the EI ability; (2) the *importance* of the EI ability for job performance; (3) the *frequency* that the EI ability is used on the job; and (4) the degree to which the EI ability distinguishes between *superior and average* performance. The *extent* to which their jobs require EI was rated on a 5-point behaviourally-anchored rating scale (1 = low requirement; 5 = high requirement). Participants used a 5-point Likert-type scale to rate the *importance* items (1=very minor importance; 5=extreme importance), the *frequency* items (1=almost never; 5=almost all of the time), and the items that assessed the degree to which the EI abilities distinguish between *superior and average* performance (1=very little; 5= to a great degree). In the present study, the reliability for the overall scale was excellent, with a Cronbach's alpha of $\alpha=.94$, and all item-total correlations greater than $r=.56$. The internal reliability for

each of the four EARS subscales (i.e., emotional perception, emotional understanding, emotional facilitation, and emotional management) ranged from $\alpha = .83$ to $\alpha = .88$, with all item-total correlations greater than $r = .49$.

*O*NET Interpersonal Skills.* An O*NET Interpersonal Skills Score was calculated to assess the extent to which a job requires interpersonal skills for successful performance, which could serve as a proxy measure of the EI requirements of jobs. O*NET provides job analysis information for hundreds of jobs. This information includes ratings of 0-100 (0=not important; 100=extremely important) for several skills (e.g., social perceptiveness, negotiation) and work activities (e.g., developing and building teams; assisting and caring for others) that may require interpersonal interactions and therefore, should require emotional abilities.

To select the skills and work activities that would be used to generate the O*NET Interpersonal Skills Score for each participant, I conducted an initial screening of all of the skills and work activities listed on O*NET and selected those items that involved interpersonal interaction. SMEs were provided with the definitions of each of these skills and work activities, as well as the definition of EI as defined by Mayer and Salovey (1997), and were asked to rate the extent to which these skills and work activities would require EI (see Appendix C for a complete list of the SME ratings). Sixteen items were identified as requiring high EI: These items comprised the O*NET Interpersonal Skills Score (0 = low; 100 = high) and included skills such as negotiation, persuasion, and social perceptiveness, and work abilities such as guiding, directing, and motivating subordinates.

Each participant in this study was asked to provide their job title and a brief job description. Based on their job information, participants were assigned scores for each of the sixteen skills and work activities using the O*NET ratings. A mean O*NET Interpersonal Skills Score was calculated across these sixteen items for each participant. Internal reliability of the overall measure was excellent, with a Cronbach's alpha of $\alpha = .96$, and all item-total correlations greater than $r = .52$.

Emotional Labour. Emotional labour was assessed using the 5-item, self-report Wong and Law Emotional Labour scale (Wong & Law, 2002). Items assessed the extent to which employees are required to manage their emotions in order to perform their job well (e.g., "to perform my job well, it is necessary for me to hide my actual feeling when acting and speaking with people;" "to perform my job well, it is necessary for me to be considerate and think from the point of view of others"). Each item was rated on a 7-point, Likert-type scale (1= strongly disagree; 7= strongly agree). Internal reliability of the overall measure was good, with a Cronbach's alpha of $\alpha = .74$, and all item-total correlations greater than $r = .47$.

Job Requirements. Two distinct job requirements scales were created for the purpose of this study in order to assess: (1) Interpersonal Job Requirements; and (2) Data-oriented Job Requirements. These scales were developed based on job requirements that are typically assessed with popular job analysis tools (e.g., PAQ; FJA) and designed to assess the convergent and discriminant validity of the EARS.

The Interpersonal Job Requirements Scale was developed to provide evidence of convergent validity because the literature suggests that high EI is beneficial for the successful completion of interpersonal-based tasks (Lopes et al., 2004; Lopes et al., 2004;

Schutte et al., 2001). The Interpersonal Job Requirements Scale was comprised of 15 items that were rated as requiring a high degree interpersonal interaction. Items included coaching, persuading and negotiating (see Appendix D). Participants were required to rate each of the items in terms of its importance to their job (1=very minor importance, 5=extreme importance) and the frequency with which it is used (1=almost never; 5=almost all of the time). Internal reliability of this scale was excellent, with a Cronbach's alpha of $\alpha = .94$, with all item-total correlations greater than $r = .41$.

The Data-oriented Job Requirements Scale was created to provide evidence of discriminant validity: That is, to ensure that participants were not rating job requirements systematically high, it was important to create a scale that consisted of job tasks that are important to many jobs and may be complex in nature, but which do not require much (or any) interpersonal interaction. The Data-oriented Job Requirements scale comprised 11 items that tended to involve processing and analyzing data and tended *not* to involve interpersonal interaction. Items included compiling, analyzing, and reading (See Appendix E). Participants were required to rate each of the items in terms of its importance to their job (1=very minor importance, 5=extreme importance) and the frequency with which it is used (1=almost never; 5=almost all of the time). Internal reliability of this scale was very good, with a Cronbach's alpha of $\alpha = .89$, and all item-total correlations greater than $r = .34$.

Emotional Intelligence. Three measures were used to assess EI: the Mayer, Salovey, and Caruso Emotional Intelligence Test (i.e., MSCEIT), the Wong and Law Emotional Intelligence Scale (i.e., WLEIS), and the Schutte Emotional Intelligence Scale (i.e., SEIS).

Mayer, Salovey, and Caruso Emotional Intelligence Test. The MSCEIT V2.0

(Mayer, Salovey & Caruso, 2002) is a 141-item self-report measure of EI which takes 30-45 minutes to complete. This measure consists of 8 different tasks (faces, pictures, facilitation, sensations, changes, blends, emotional management, and emotional relations), which tap into the 4 EI abilities. A total score, as well as two *area* scores (i.e., experimental EI and strategic EI) and four *branch* scores (i.e., emotional understanding, emotional perception, emotional facilitation, emotional management) are generated. Scores are computed by calculating empirical percentiles and then positioning them on a normal curve. Similar to traditional IQ scores, each ability score has an average of 100 and a standard deviation of 15. Consensus scoring was used in this study. However, the scoring method should have minimal impact on the results given that consensus and expert scoring tend to yield very similar outcomes.³ Mayer, et al, 2003 report that, when using consensus scoring the internal reliability of the overall measure was very good with a Cronbach's alpha of $\alpha = .93$. They also report good internal reliability when the items are factored into two subscales (experiential EI: $\alpha = .90$; strategic EI: $\alpha = .88$). Finally, Mayer, et al, (2003) report that the internal reliability of the four subscales is good with Cronbach's alpha ranging from $\alpha = .79$ to $\alpha = .81$.⁴

Schutte Emotional Intelligence Scale. The SEIS is a 33-item scale that included items such as: "I am aware of my emotions as I experience them" and "when I experience a positive emotion I know how to make it last." Each of the items is rated using a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree). Internal consistency of the

³ Mayer, Salovey, Caruso & Sitarenios (2003) found that consensus scores and expert scores were highly correlated ($r > .90$).

⁴ The scale reliabilities could not be calculated in this study as the MSCEIT is scored by MHS (the test publisher), and therefore, the item scores were not available.

overall measure was good with a Cronbach's alpha of $\alpha=.90$; however, some of the item-total correlations were low (i.e., $r=.14$).

Wong and Law Emotional Intelligence Scale. The WLEIS is a 16-item self-report measure of EI, based on the four-factor ability model of EI. Accordingly, the 16-items factored into four 4-item scales are similar to Mayer and Salovey's (1997) conceptualization of emotional understanding, perception, facilitation, and management. Wong and Law (2002) have named these scales: *self-emotions appraisal* (SEA; similar to emotional understanding), *others-emotions appraisal* (OEA; similar to emotional perception), *use of emotion* (UOE; similar to emotional facilitation), and *regulation of emotion* (ROE; similar to emotional management). For the purposes of this study, however, we will refer to these variables as *understanding*, *perception*, *facilitation*, and *management* for ease of interpretation. Items include "I always know my friends emotions from their behaviour" and "I am able to control my temper and handle difficulties rationally." Each of the items are rated on a 7-point Likert-type scale (1= strongly disagree; 7= strongly agree). Internal reliability of the four scales ranged from $\alpha=.83$ to $\alpha=.89$, and all item-total correlations greater than $r=.40$.

Job Performance. A self-report job performance scale was created for this study. The scale consisted of seven items, capturing overall job performance and more specific aspects of performance that are theorized to be related to EI (e.g., team work; see Appendix F). Items were rated on a 10-point Likert-type scale (0 = poor; 9 = exceptional). Internal reliability of the overall measure was excellent, with a Cronbach's alpha of $\alpha=.89$, and all item-total correlations greater than $r=.53$.

Procedure

Most of the participants were recruited via The StudyResponse Project. The Study Response Project distributed email participation requests to 800 employed adult volunteer research participants (<http://istprojects.syr.edu/~studyresponse/studyresponse/index.htm>). The additional participants who were recruited directly by the investigators and through snowballing techniques were sent the link to Survey Monkey questionnaire directly via email. When participants received the email, they were prompted to click on a link that took them to the online questionnaire hosted by Survey Monkey (www.surveymonkey.com). Participants completed all the scales on this site, with the exception of the MSCEIT, because it is copyrighted and controlled by the publisher. A link was provided at the end of the Survey Monkey questionnaire to the MSCEIT log-in page. The MSCEIT scores were matched with the data from the Survey Monkey scales by using a participant ID. Names or any other identifying information was not used.

Prior to accessing the questionnaires, all participants were provided with a detailed description of the study and consent was obtained. E-mail reminders were sent out 1 week and 2 weeks after the initial recruitment contact. Participants were free to withdraw participation at any time without penalty. Participants who completed the questionnaires were entered in a draw for one of several \$50 gift certificates. This study abided by current ethical standards and was approved by the Saint Mary's Research Ethics Board (REB Certificate # 05-128; see Appendix H).

Results

Prior to testing the hypotheses the data was screened for outliers, data entry errors, non-random missing data, and violations of assumptions including non-linearity,

non-normality, multicollinearity, and heteroskedasticity. Frequencies and descriptive statistics were run using SPSS 14.0 for Windows. One univariate outlier, at a distance of greater than 4.0 standard deviations from the mean, was detected in the distribution of emotional labour. However, it was not deleted as this variable was only used in one analysis and the outlier would have minimum impact given the large sample size. No other outliers or any violations of assumptions were identified. Missing data was treated using listwise deletion resulting in the removal from the analysis of any case missing a value on any of the variables included in that analysis. The descriptive statistics for the study variables are presented in Table 1.

Table 1.

*Descriptive Statistics for the EARS, O*NET scores, emotional labour, job requirements, and emotional intelligence.^a*

Variable	Scale	<i>M</i>	<i>SD</i>
1. EARS TOTAL	1-5	3.41	.88
2. EARS Perception	1-5	3.34	1.06
3. EARS Understanding	1-5	3.37	.99
4. EARS Facilitation	1-5	3.30	1.05
5. EARS Management	1-5	3.61	.95
6. Interpersonal Job Requirements	1-5	3.26	.69
7. Data-oriented Job Requirements	1-5	3.55	.67
8. O*NET Scores	0-100	55.06	14.61
9. Emotional Labour	1-7	5.17	1.04
10. MSCEIT Perception	Normed, <i>M</i> =100, SD=15	95.50	18.11
11. MSCEIT Understanding	Normed, <i>M</i> =100, SD=15	94.31	14.05
12. MSCEIT Facilitation	Normed, <i>M</i> =100, SD=15	93.40	17.94
13. MSCEIT Management	Normed, <i>M</i> =100, SD=15	94.35	12.94
14. Schutte et al. EI	1-5	3.62	.39
15. WLEIS Understanding	1-7	5.59	.89
16. WLEIS Perception	1-7	5.39	.93
17. WLEIS Facilitation	1-7	5.56	.98
18. WLEIS Management	1-7	5.26	1.16
19. Job Performance	0-9	7.12	.95

^a Note: N=350 for all scales, except the MSCEIT, in which N=199

Factor Structure and Reliability

To address Hypothesis 1, confirmatory factor analyses (CFAs) using maximum likelihood estimation were conducted, using EQS, Version 6.1. CFAs were conducted based on the theoretical four-factor model (i.e., emotional understanding, emotional perception, emotional facilitation, and emotional management), as well as the one-factor model and the theoretical two-factor model (i.e., experiential EI and strategic EI) for comparison purposes. It was hypothesized that the four-factor EI model would be the best fit. The fit indices for each of the models are presented in Table 2, and the measurement models are depicted in Figures 1-3.

Hu and Bentler (1998) advocated the use of at least two fit indices when presenting the results of a CFA and recommended always using the standardized root mean square residual (SRMR), because it is the most sensitive to misspecification error (i.e., the SRMR is generally high when the model is a good fit and generally low when the model is a poor fit). Furthermore, Tabachnick and Fidell (2001) stated that the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are the most commonly reported fit indices. Therefore, in this study the SRMR, the CFI, and the RMSEA are presented. Hu and Bentler (1999) suggested that a SRMR less than .08, a CFI greater than .95, and a RMSEA lower than .06 indicate a good fitting model.

For the one-factor model, the SRMR was .08, the CFI was .73, and the RMSEA was .18, indicating a poor fit (see Table 2). All loadings were significant and accounted for at least 30.0% of the variance in the solution (see Figure 1). For the two-factor model, the SRMR was .08, the CFI was .74, and the RMSEA was .18. All loadings were significant and accounted for at least 31.7% of the variance in the solution (see Figure 2).

For the four-factor model, the SRMR was .07, the CFI was .84, and the RMSEA was .14 (see Figure 3). All loadings were significant and accounted for at least 28.6% of the variance in the solution. Although the SRMR data indicates a good fit for all three models, none of these models met the suggested fit criteria for the CFI and RMSEA. Therefore, overall the evidence suggests that all three models did not fit the data well.

Chi-square difference tests were conducted to see if any of the models had a significantly better fit than the others. To compare two nested models, Tabachnick and Fidell (2001) recommended subtracting the chi-square value of the larger model from the chi-square value of the smaller model and subtracting the degrees of freedom of the larger model from the degrees of freedom of the smaller model. The difference in degrees of freedom can then be used to obtain critical value that can be used to evaluate the significance of the chi-square difference value. The chi-square difference tests indicated that the four-factor model fit the data better than the two-factor model ($\chi^2_{\text{difference}} = 419.46$, $df=5$, $p < .001$) and the two-factor model fit the data better than the one-factor model ($\chi^2_{\text{difference}} = 39.11$, $df=1$, $p < .001$).

Table 2.

Fit indices for the one-component and four-component EARS model (N=350).

	Model	χ^2	SRMR	CFI	RMSEA
1.	One-component model	1153.12***	.079	.73	.18
2.	Two-component model	1114.01***	.078	.74	.18
3.	Four-component model	694.55***	.072	.84	.14

 $p < .001$

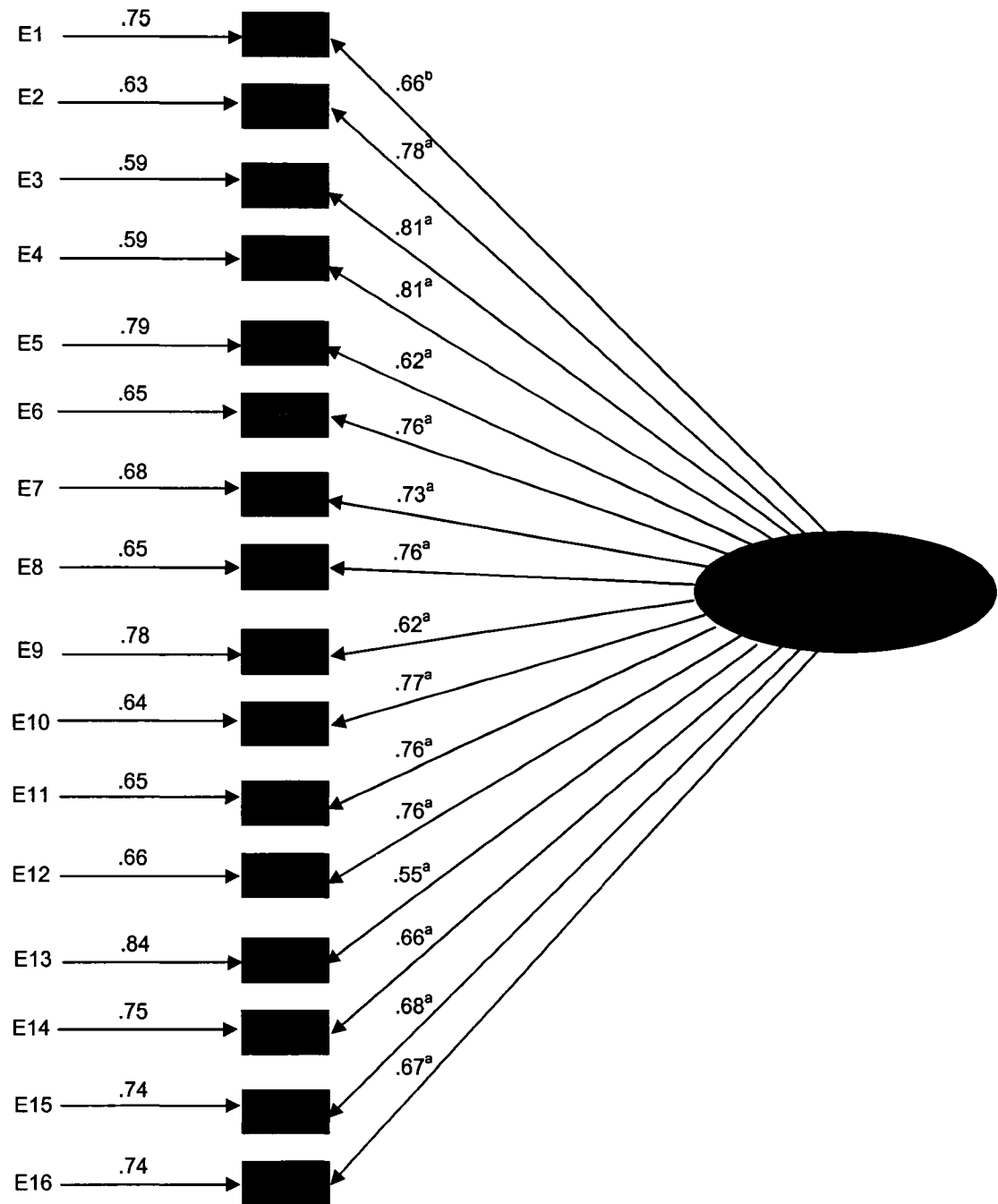


Figure 1. EQS estimates of the one-factor measurement model ($N=350$).⁵

⁵ Standardized loadings are reported. Please note that ^a indicates loadings that are significant at $p < .05$ and ^b indicates loadings for which the significance test is not available as the item was fixed at 1

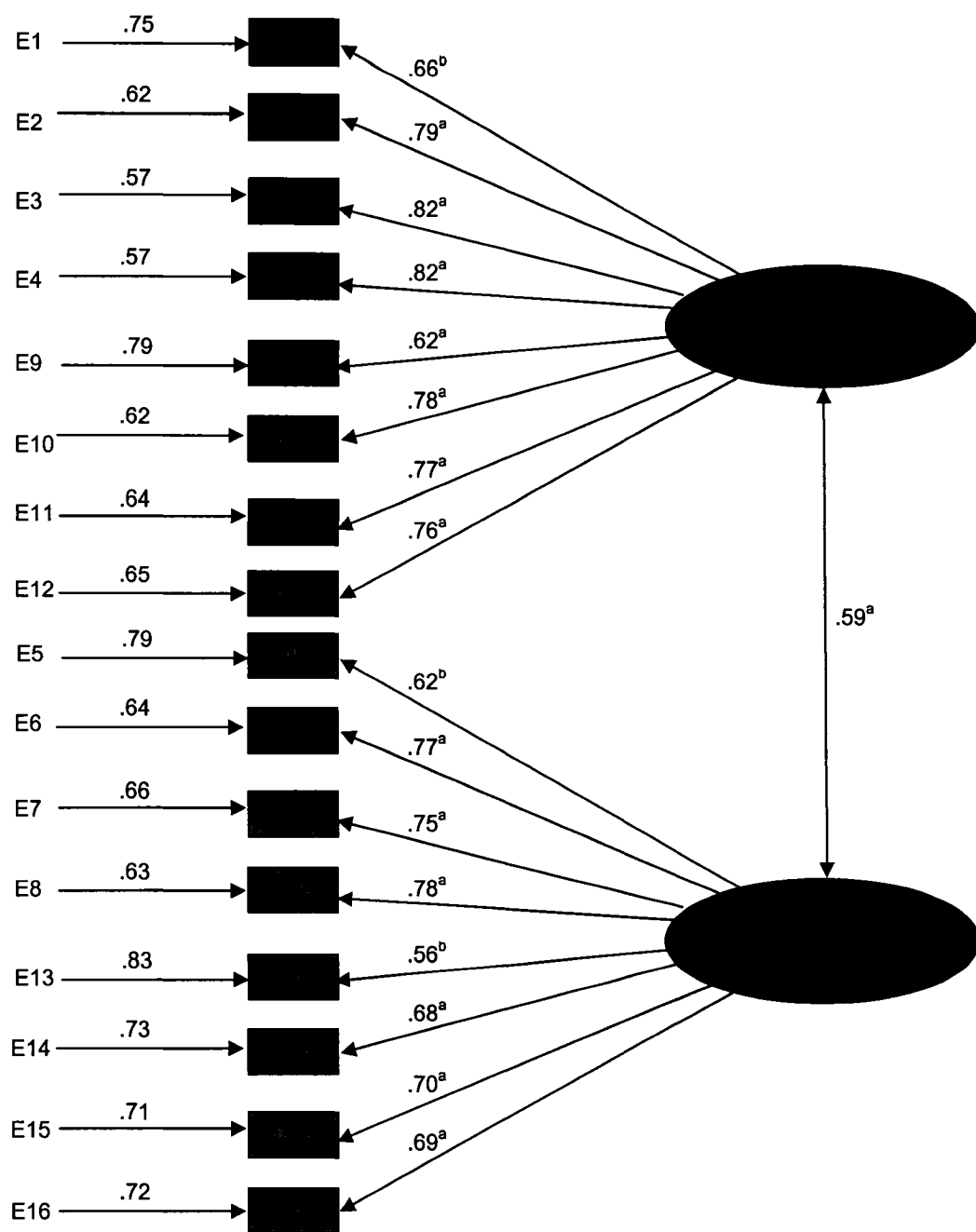


Figure 2. EQS estimates of the two-factor measurement model ($N=350$).⁶

⁶ Standardized loadings are reported. Please note that ^a indicates loadings that are significant at $p < .05$ and ^b indicates loadings for which the significance test is not available as the item was fixed at 1

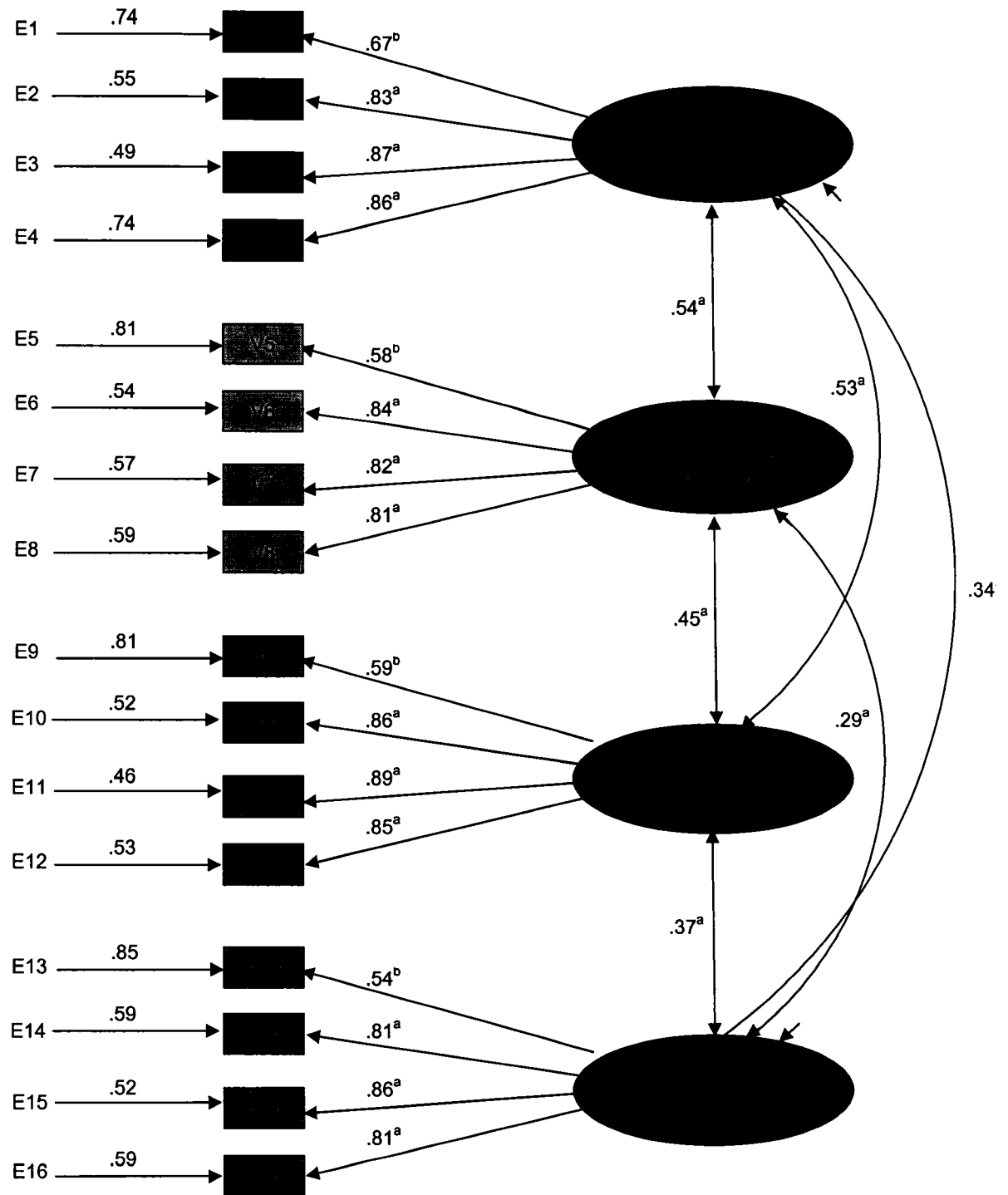


Figure 3. EQS estimates of the four-factor measurement model ($N=350$).⁷

⁷ Standardized loadings are reported. Please note that ^a indicates loadings that are significant at $p < .05$ and ^b indicates loadings for which the significance test is not available as the item was fixed at 1

Although, overall the CFA results did not indicate a very good fit for any of the models, the four-factor model fit the data significantly better than the one-factor or two-factor models. Furthermore, the SRMR, which is the fit index that Hu and Bentler (1998) found to be the most sensitive to model misspecification, indicated that the four-factor model fit the EARS data well. Because of these results, and because the four-factor model has the most theoretical support within the EI literature, the subsequent analyses were conducted with the four subscales of the EARS (i.e., EARS perception, EARS understanding, EARS facilitation, and EARS management).

To assess hypothesis 1b, the internal reliabilities of the four EARS subscales were examined. All of the reliabilities for these four scales were high. The emotional perception subscale had a Cronbach's alpha of $\alpha = .88$, and all item-total correlations were greater than $r = .63$. The emotional understanding subscale had a Cronbach's alpha of $\alpha = .83$, and all item-total correlations were greater than $r = .49$. The emotional management subscale had a Cronbach's alpha of $\alpha = .83$, and all item-total correlations were greater than $r = .50$. Finally, the emotional facilitation subscale had a Cronbach's alpha of $\alpha = .86$, and all item-total correlations were greater than $r = .54$.

Convergent and Discriminant Validity

Several correlation analyses were conducted to assess the convergent and discriminant validity of the EARS (see Table 3). To address Hypothesis 2a, correlations were conducted between the EARS subscales and the two Job Requirements Scales. The Interpersonal Job Requirements Scale was significantly correlated with the EARS perception subscale ($r = .48, p < .001$), EARS understanding subscale ($r = .50, p < .001$), EARS facilitation subscale ($r = .46, p < .001$), and EARS management subscale ($r = .48, p$

<.001). The Data-oriented Job Requirements Scale was also significantly correlated with the EARS perception subscale ($r = .11, p < .05$), EARS understanding subscale ($r = .12, p < .05$), EARS facilitation subscale ($r = .16, p < .01$), and EARS management subscale ($r = .12, p < .05$). As hypothesized, tests of dependent correlation indicated that the correlations between the EARS and Interpersonal Job Requirements were significantly higher than the correlations between the EARS and Data-oriented Job Requirements (Perception: $t = 3.55, p < .05$; Understanding: $t = 4.19, p < .05$; Facilitation: $t = 3.14, p < .05$; Management: $t = 3.61, p < .05$).

Table 3.

Correlations among the EARS, demographic variables, and measures of convergent and discriminant validity. Reliability coefficients for each of the measures are shown in parentheses along the diagonal¹.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Gender	----																					
2 Age	-.03	----																				
3 Education	.01	-.04	---																			
4 Job Experience	-.04	.56 ^a	-.02	---																		
5 EARS Perception	.13 ^c	.13 ^c	.12 ^c	.16 ^b	(.88)																	
6 EARS Understan.	.17 ^b	.17 ^b	.11 ^c	.12 ^c	.82 ^a	(.83)																
7 EARS Facilitat.	.14 ^b	.14 ^b	.11 ^c	.13 ^c	.67 ^a	.68 ^a	(.86)															
8 EARS Mgmt.	.12 ^c	.12 ^c	.10	.09	.65 ^a	.66 ^a	.67 ^a	(.83)														
9 O*NET score	.09	.01	.28 ^a	.06	.37 ^a	.37 ^a	.29 ^a	.29 ^a	(.96)													
10 Emotional Labour	.13 ^c	.11 ^c	.02	.15 ^b	.44 ^a	.42 ^a	.37 ^a	.33 ^a	.31 ^a	(.74)												
11 Interpersonal Req's.	-.05	.07	.15 ^b	.16 ^b	.48 ^a	.50 ^a	.46 ^a	.48 ^a	.41 ^a	.38 ^a	(.94)											
12 Data-oriented Req's	.03	-.03	.04	.08	.11 ^c	.12 ^c	.16 ^b	.12 ^c	.05	.03	.42 ^a	(.89)										
13 MSCEIT Percept.	.26 ^a	.04	-.01	.00	-.01	-.04	-.09	-.07	.05	-.03	-.03	.24 ^b	(.91 ²)									
14 MSCEIT Underst.	.37 ^a	.11	.04	-.01	.11	.09	-.03	.08	.18 ^c	-.01	.07	.22 ^b	.44 ^a	(.88 ²)								
15 MSCEIT Facilitat.	.34 ^a	.06	-.10	-.06	.05	.05	.03	.04	.01	-.06	.03	.29 ^a	.61 ^a	.52 ^a	(.79 ²)							
16 MSCEIT Mgmt.	.31 ^a	.16 ^c	-.06	-.04	.16 ^c	.15 ^c	.14	.09	.14	.06	.12	.31 ^a	.47 ^a	.60 ^a	.62 ^a	(.83 ²)						

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
17 WLEIS Understand.	.13 ^c	.11 ^c	.11 ^c	.08	.26 ^a	.23 ^a	.22 ^a	.23 ^a	.20 ^a	.29 ^a	.18 ^b	.14 ^c	.18 ^c	.17 ^c	.20 ^b	.30 ^a	(.86)					
18 WLEIS Percept.	.25 ^a	.02	.08	.08	.34 ^a	.29 ^a	.24 ^a	.21 ^a	.23 ^a	.37 ^a	.13 ^c	.08	.08	.17 ^c	.08	.14	.53 ^a	(.87)				
19 WLEIS Facilit.	.07	.13 ^c	.09	.14 ^b	.24 ^a	.18 ^b	.15 ^b	.20 ^a	.17 ^b	.35 ^a	.21 ^a	.09	.00	.01	.05	.18 ^c	.6 ^a	.42 ^a	(.83)			
20 WLEIS Mgmt.	-.03	.08	.12 ^c	.06	.20 ^a	.13 ^c	.13 ^c	.15 ^b	.14 ^c	.27 ^a	.05	.03	.05	.00	.05	.12	.57 ^a	.40 ^a	.52 ^a	(.89)		
21 SEIS	.10	.00	.12 ^c	.08	.36 ^a	.34 ^a	.31 ^a	.31 ^a	.23 ^a	.34 ^a	.28 ^a	.13 ^c	.05	.05	.08	.19 ^b	.68 ^a	.62 ^a	.50 ^a	.61 ^a	(.92)	
22 Job Performance	.16 ^b	.02	.07	.01	.14 ^b	.17 ^b	.17 ^b	.17 ^b	.01	.20 ^a	.20 ^a	.11 ^c	.15 ^c	.22 ^b	.20 ^b	.24 ^b	.38 ^a	.35 ^a	.34 ^a	.31 ^a	.46 ^a	(.89)

¹Note: N=350 for all correlations, with the exception of correlations involving the MSCEIT, for which N=199

²Note: The scale reliabilities could not be calculated in this study, therefore the reliabilities reported in Mayer et al., (2003) are presented.

³Note: Gender: 0=male, 1=female

^a $p < .001$, ^b $p < .01$, ^c $p < .05$

Furthermore, to test Hypothesis 2b, four hierarchical regression analyses were conducted to examine the incremental validity of the Interpersonal Job Requirements in predicting EARS scores, after controlling for the Data-oriented Job Requirements (see Table 4). For each of the four hierarchical regression analyses, one of the four EARS subscale was regressed on the Data-oriented Job Requirements scale in the first step and on the Interpersonal Job Requirements scale in the second step. The Data-oriented Job Requirements accounted for a significant amount of variance in all of the EARS subscales. When entered on the second step, the Interpersonal Job Requirements accounted for a significant portion of additional variance in all of the EARS subscales.

Table 4.

Summary of Hierarchical Regression Analyses of the EARS on Data-oriented Job Requirements and Interpersonal Job Requirements.

	<i>B</i>	<i>R</i> ² _{change}	Total <i>R</i> ²
1. EARS Perception			
<i>Step 1</i> : Data-oriented Job Requirements	.23**	.02**	.02**
<i>Step 2</i> : Interpersonal Job Requirements	.77***	.21***	.23***
2. EARS Understanding			
<i>Step 1</i> : Data-oriented Job Requirements	.22**	.02**	.02**
<i>Step 2</i> : Interpersonal Job Requirements	.75***	.23***	.25***
3. EARS Facilitation			
<i>Step 1</i> : Data-oriented Job Requirements	.26**	.03**	.03**
<i>Step 2</i> : Interpersonal Job Requirements	.72***	.19***	.22***
4. EARS Management			
<i>Step 1</i> : Data-oriented Job Requirements	.20**	.02**	.02**
<i>Step 2</i> : Interpersonal Job Requirements	.70***	.22***	.24***

****p* < .001 ***p* < .01, **p* < .05

To address Hypothesis 3, correlations were conducted between the four EARS subscales and the O*NET Interpersonal Skills Score (see Table 2). As expected, O*NET Interpersonal Skills Scores correlated significantly with the EARS perception subscale ($r = .38, p < .001$), EARS understanding subscale ($r = .38, p < .001$), EARS facilitation subscale ($r = .38, p < .001$), and EARS management subscale ($r = .38, p < .001$).

To address Hypothesis 4, correlations were also conducted among the four subscales of the EARS and the three measures of job incumbent EI (i.e., WLEIS, SEIS, and MSCEIT; see Table 2). All of the EARS subscales correlated significantly with the SEIS total score and the four WLEIS subscales. Correlations between the EARS subscales and the SEIS ranged from $r = .31$ to $r = .36$ ($p < .001$). Correlations between the EARS subscales and the WLEIS subscales ranged from $r = .13$ to $r = .34$ ($p < .05$). Only two correlations between the MSCEIT subscales and the EARS subscales were significant: the MSCEIT emotional management subscale was correlated with both the EARS perception subscale ($r = .16, p < .05$) and the EARS understanding subscale ($r = .15, p < .05$).

Finally, to address Hypothesis 5, a correlation analysis was conducted between the EARS subscales and the emotional labour scale. As hypothesized, emotional labour correlated significantly with the EARS perception subscale ($r = .44, p < .001$), EARS understanding subscale ($r = .42, p < .001$), EARS facilitation subscale ($r = .37, p < .001$), and EARS management subscale ($r = .33, p < .001$).

Moderated Regression

Moderated regression analyses were used to test the hypothesis that the EARS scores would moderate the relationship between EI and job performance (Hypothesis 6).

Three sets of regression analyses were conducted; one using the MSCEIT subscales as the predictor, one using the WLEIS subscales as the predictor, and one using the SEIS score as the predictor (see Table 5, Table 6, and Table 7, respectively). Four analyses were conducted with each of these predictors – one for each of the EARS subscales. For the analyses involving the MSCEIT and the SEIS, only the specific subscales corresponding with the EARS subscale were used as predictors (e.g., the MSCEIT emotional perception subscale was used as the predictor when the EARS emotional perception subscale was used as the moderator). The procedures for moderation analysis suggested by Aiken and West (1992) were used. Prior to analysis all of the variables were standardized and interaction terms were created between the predictor and the moderator⁸.

In the first set of four analyses, each of the four MSCEIT subscales was entered in the first step. Each of the four EARS subscales was entered in the second step, and the interaction between the two scales was entered in the third step (see Table 5). The pattern of results was the same for all analyses. Each of the MSCEIT subscales accounted for a significant amount of variance in job performance in the first step (R^2 's ranged from .02 to .06, $p < .05$). Each of the EARS subscales accounted for a significant increase in variance in the second step (R^2_{change} ranged from .04 to .05, $p < .01$). However, none of the interactions were significant in the third step (R^2_{change} ranged from .00 to .01, $p > .05$).

In the second set of analyses, each of the WLEIS subscales were entered in the first step. Each of the EARS subscales were entered in the second step, and the interaction between the two was entered in the third step (see Table 6). The pattern of

⁸ Aiken and West (1991) recommended that variables be centered. However, standardization accomplishes the same effect and also makes computation of the interactions easier because it changes the standard deviations to +/-1.

results was similar for all analyses. Each of the WLEIS subscales accounted for a significant amount of variance in job performance in the first step (R^2 's ranged from .10 to .14, $p < .05$). The EARS facilitation subscale ($R^2_{change} = .01$, $p < .05$) and the EARS management subscale ($R^2_{change} = .02$, $p < .05$) subscales did account for a significant, but modest, increase in variance in the second step. However, the EARS perception subscale ($R^2_{change} = .00$, $p > .05$) and EARS understanding subscale ($R^2_{change} = .01$, $p > .05$) did not account for a significant amount of variance in the second step. Again, none of the interactions were significant in the third step (R^2_{change} ranged from .00 to .01, $p > .05$).

In the third set of analyses, the total SEIS score was entered in the first step. Each of the EARS subscales were entered in the second step, and the interaction between the two was entered in the third step (see Table 5). The pattern of results was the same for all analyses. The SEIS accounted for a significant amount of variance in job performance in the first step (R^2 's = .21, $p < .001$). None of the EARS subscales accounted for a significant increase in variance in the second step (R^2_{change} ranged from .00 to .01, $p > .05$). In addition, none of the interactions were significant in the third step (R^2_{change} ranged from .00 to .01, $p > .05$).

Table 5.

Summary of Regression Analysis for the interaction effects between the MSCEIT and the EARS on job performance (N=199).

	<i>B</i>	<i>R</i> ² _{change}	Total <i>R</i> ²
1. Perception			
Step 1: MSCEIT Perception	.14*	.02*	.02*
Step 2: EARS Perception	.17**	.04**	.06**
Step 3: MSCEIT*EARS	-.06	.01	.06**
2. Understanding			
Step 1: MSCEIT Understanding	.20**	.05***	.05***
Step 2: EARS Understanding	.19**	.04**	.09***
Step 3: MSCEIT*EARS	-.04	.00	.09***
3. Facilitation			
Step 1: MSCEIT Facilitation	.18**	.04**	.04**
Step 2: EARS Facilitation	.18**	.04**	.08***
Step 3: MSCEIT*EARS	-.09	.01	.09**
4. Management			
Step 1: MSCEIT Management	.22**	.06**	.04**
Step 2: EARS Management	.21**	.05**	.11***
Step 3: MSCEIT*EARS	-.08	.01	.12***

****p* < .001, ***p* < .01, **p* < .05

Table 6.

Summary of Regression Analysis for the interaction effects between WLEIS and EARS on job performance (N=350).

	<i>B</i>	<i>R</i> ² _{change}	Total <i>R</i> ²
1. Perception			
Step 1: WLEIS Perception	.33 ^{***}	.12 ^{***}	.12 ^{***}
Step 2: EARS Perception	.03	.00	.12 ^{***}
Step 3: WLEIS*EARS	.06	.01	.13 ^{***}
2. Understanding			
Step 1: WLEIS Understanding	.36 ^{***}	.14 ^{***}	.14 ^{***}
Step 2: EARS Understanding	.08	.01	.15 ^{***}
Step 3: WLEIS *EARS	.02	.00	.15 ^{***}
3. Facilitation			
Step 1: WLEIS Facilitation	.32 ^{***}	.11 ^{***}	.11 ^{***}
Step 2: EARS Facilitation	.11 [*]	.01 [*]	.13 ^{***}
Step 3: WLEIS *EARS	-.04	.00	.13 ^{***}
4. Management			
Step 1: WLEIS Management	.31 ^{***}	.10 ^{***}	.10 ^{***}
Step 2: EARS Management	.13 [*]	.02 [*]	.11 ^{***}
Step 3: WLEIS *EARS	-.07	.00	.12 ^{***}

*** $p < .001$, ** $p < .01$, * $p < .05$

Table 7.

Summary of Regression Analysis for the moderation of the relationship between EARS and Job Performance by emotional intelligence as measured by the SEIS (N=350).

	<i>B</i>	<i>R</i> ² _{change}	<i>Total R</i> ²
1. Perception			
Step 1: SEIS	.44 ^{***}	.21 ^{***}	.21 ^{***}
Step 2: EARS Perception	-.02	.00	.21 ^{***}
Step 3: SEIS*EARS	.06	.01	.22 ^{***}
2. Understanding			
Step 1: SEIS	.44 ^{***}	.21 ^{***}	.21 ^{***}
Step 2: EARS Understanding	.01	.00	.21 ^{***}
Step 3: SEIS*EARS	.00	.00	.21 ^{***}
3. Facilitation			
Step 1: SEIS	.44 ^{***}	.21 ^{***}	.21 ^{***}
Step 2: EARS Facilitation	.03	.00	.21 ^{***}
Step 3: SEIS*EARS	-.01	.00	.21 ^{***}
4. Management			
Step 1: SEIS	.46 ^{***}	.21 ^{***}	.21 ^{***}
Step 2: EARS Management	.03	.00	.21 ^{***}
Step 3: SEIS*EARS	.00	.00	.21 ^{***}

*** $p < .001$, ** $p < .01$, * $p < .05$

Discussion

The purpose of this study was to revise and validate a job analysis tool that can be used by organizations and researchers to assess the amount of EI required for different jobs. Knowing the extent to which EI is required for job performance will enable human resources professionals to decide whether or not EI can be a useful predictor of performance. In addition, if EI is required for successful job performance, the EARS may be useful in establishing EI benchmarks that can be used in recruitment, selection, and promotion initiatives.

The present study consisted of two phases: In phase one, the EARS was refined and further developed in consultation with SMEs. The content validation strategies recommended by Crocker and Algina (1986) and AERA, APA, and NCME (1999) were followed. In phase two, the reliability and validity of the EARS were examined using a sample of 350 job incumbents from a large variety of professions.

The results provide some evidence for the reliability and validity of the EARS. Given that the EARS was developed based on the ability-based model of EI, which is most commonly theorized to have four dimensions, it was hypothesized that the EARS would cluster into four factors (Hypothesis 1a). However, given that EI also has been theorized to fit a one-factor and two-factor model (e.g., Mayer et al., 2003), these factor structures were explored as well. Overall, the CFAs indicated that the one-factor, two-factor, and four-factor EI models did not fit the EARS data very well. Although there is strong theory to support the four-factor model of EI (e.g., Gignac et al., 2005; Mayer & Salovey, 1997; Mayer et al., 1999; Mayer et al., 2000; Mayer et al., 2004; Petrides & Furnham, 2000; Saklofske et al., 2003; Salovey & Mayer, 1990; Salovey et al., 2003;

Wong & Law, 2002) and some theory to support the two-and one-factor models of EI (e.g., Mayer et al., 2003), not all of the empirical evidence provides support for these models. For example, when examining the factor structure of the MSCEIT, Palmer, Gignac, Manocha, and Stough (2005) found that the two- and one-factor structures did not fit the data at all. In addition, they found that the four-factor model provides an adequate fit for MSCEIT data, but a hierarchical three-factor model fit the data best.

However, all three models did meet the SRMR fit index criteria for a good fitting model (i.e., $SRMR < .08$; Hu & Bentler, 1999). Hu and Bentler (1998) found that the SRMR was particularly sensitive to misspecification error. Therefore, the fact that the SRMR is within acceptable limits, suggests that these models may be representative of the relationships within the data. Moreover, although none of the proposed models fit the EARS data adequately, the pattern of results is encouraging. In this study, the four-factor model fit the EARS data significantly better than the two-factor model and the one-factor model, which is consistent with past research on the factor structure of the MSCEIT. Mayer (2003) also found that a four-factor model fit the MSCEIT data better than one-factor and two-factor models. Furthermore, Palmer et al., (2005) and Gignac (2005) found that a four-factor model fit the MSCEIT data, while one-factor and two-factor models did not.

The internal reliabilities of the four EARS subscales (i.e., emotional perception, emotional understanding, emotional facilitation, and emotional management) were high, thus supporting Hypothesis 1b. These results suggest that the items within the scales tend to be measuring the same construct. It is noteworthy, however, that the lowest item-total correlations were consistently for the *extent* items across the four scales. Therefore,

modifying the presentation of the items in the future may further increase the internal consistency of these scales.

Although the evidence regarding the factor structure of the EARS is not entirely clear, it does suggest that the EARS has potential for fitting the theoretical four-factor EI model. The results also suggest that further development of the EARS scale is needed to ensure that it is adequately measuring EI job requirements. In the current version of the EARS, a definition of the emotional ability and the corresponding BARS was presented on a separate page for each of the four abilities. The questions about the importance, frequency, and superior performance for all four abilities were presented on one page at the end of the scale (see Appendix B). In the future, it may be beneficial to present all of the information and items for each emotional ability on the same page. Therefore, people who are responding to the survey will have the full definition of the emotional ability and the information from the BARS to inform their responses to all scale items.

The goal of Hypotheses 2a, 2b, 3, 4, and 5 was to examine convergent and discriminant evidence of validity. To address Hypothesis 2a, the EARS was correlated with the Interpersonal and Data Job Requirements Scales, to provide evidence of both the convergent and the discriminant validity of the EARS. The pattern of the correlation coefficients was as predicted; The EARS subscales demonstrated significantly stronger correlations with the Interpersonal Job Requirements Scale than with the Data-oriented Job Requirements Scale. These results demonstrate convergent validity of the EARS in that a theoretically relevant construct (i.e., interpersonal job requirements) was strongly related to the EARS, and demonstrate discriminant validity in that a theoretically dissimilar construct (i.e., data-oriented requirements) demonstrated low correlations with

the EARS. In addition, the Interpersonal Job Requirements Scale accounted for additional variance in the EARS after controlling for the Data-oriented Job Requirements Scale. These results indicate that interpersonal job requirements accounts for unique variance in EI job requirements (as measured by the EARS), after controlling for other important and complex job requirements. These results suggest that overall job complexity is not accounting for the entire relationship between the Interpersonal Job Requirements Scale and the EARS. Therefore, the relationship appears to be due (at least in part) to the emotional ability requirements of jobs. That is, people who have complex jobs are not arbitrarily reporting high levels of job requirements; there is some distinction between job requirements that involve EI and those requirements that do not involve EI.

Consistent with Hypothesis 3, the EARS was positively related to the measure of Interpersonal Skills generated via O*NET job requirement ratings. Therefore, people who held jobs that required a high degree of interpersonal interaction (as defined by their O*NET rating) also reported that their jobs required a high degree of emotional perception, emotional understanding, emotional facilitation, and emotional management on the EARS. The EARS is different from the O*NET score because the EARS is designed to specifically assess ability-based EI job requirements, whereas an O*NET score only measures the interpersonal requirements of job. However, because emotional abilities may be required to fulfill the interpersonal requirements of jobs, these two scales should be related. In fact, O*NET ratings have been used in several other studies as a proxy for measuring the emotional requirements of jobs (e.g., Cote & Miners, 2006; Glomb, Kammeyer-Mueller, Rotundo, 2004). Therefore, the positive relationship between O*NET ratings and EARS ratings provides evidence of convergent validity.

The hypothesis that an individual's own level of EI should be correlated with the amount of EI required in their job (i.e., Hypothesis 4) was partially supported. This hypothesis was based on the assumption that participants would occupy jobs that matched their abilities. Job incumbents who scored high on both the WLEIS and the SEIS also reported that their jobs required a high degree of EI. However, the overall pattern of correlations between the subscales of the MSCEIT and the subscales of the EARS, suggested that there is little relationship between job incumbent MSCEIT scores and EI job requirements. The only statistically significant relationships were between the level of emotional management of the job incumbent and the emotional understanding and emotional perception job requirements.

It is not surprising that the MSCEIT behaved differently than the two self-report measures of EI (i.e., WLEIS, SEIS), given previous findings (e.g., Brackett & Mayer, 2003; Goldenberg, Matheson, & Mantler, 2006). However, given that the EARS was designed to measure the same EI construct as the MSCEIT, and measures were taken to enhance the objectivity of assessment, it is surprising that there was only a modest relationships between the one of the MSCEIT subscales and two of the EARS subscales.

One explanation for this discrepancy may be that job incumbents simply do not possess that same amount of emotional ability that is required by their job. It is entirely conceivable that some individuals possess more emotional ability than is necessary, whereas some individuals possess less emotional ability than is necessary. The relationship between the EARS and the WEIS and between the EARS and the SEIS could be explained by the fact that all of these scales are more subjective. Both the WLEIS and

the SEIS are self-report measures. Although the EARS is not a self-report measure⁹, and efforts were made to enhance its objectivity (e.g., providing BARS; explaining to the participants that the measure was assessing the job and *not* the individual), it is still a subjective measure. Thus, the subjectivity associated with the EARS, WLEIS and SEIS, may partially explain the relationship between these measures.

In fact, recent literature has suggested that a self-serving bias can influence job analyses ratings, such that when describing attributes necessary for successful performance raters tend to rate attributes they believe that they possess as more important. Cucina, Vasilopoulos, and Sehgal (2005) found that between 8% and 16% of variance in the ratings of personality job requirements was accounted for by the personality of the raters (as measured by the Preliminary International Personality Item Pool; Goldberg, 1999). Therefore, in the present study, it is possible that job incumbents who rated themselves more highly on EI, also rated their jobs as requiring more EI. This explanation would account for the relationship between the EARS and the self-report measures (i.e., WLEIS, SEIS) and the lack of relationship between the EARS and the MSCEIT subscales. Because the MSCEIT is more of a performance-based measure, and consequently, a more objective measure, it is resistant to social desirability responding and faking (Carroll & Day, 2004; Day, 2004).

Furthermore, the positive relationship between the MSCEIT emotional management subscale and the two subscales of the EARS (emotional understanding and emotional perception) may be explained by the fact that the questions comprising this MSCEIT subscale are less objective than the other three subscales. Questions on the MSCEIT that are designed to tap emotional management are formatted such that test-

⁹ Participants only rate the job and not their own values of abilities.

takers are presented with a situation and are asked to rate the effectiveness of different strategies for managing emotions in oneself (e.g., Emotion Management Task) and others (e.g., Social Management Task). Both Day (2004) and Lopes et al. (2005) have asserted that these types of questions may assess *knowledge* of effective emotional management responses, rather than *actual* emotional management *abilities*.

Additional evidence of convergent validity was provided by the positive relationship between the EARS and emotional labour (i.e., Hypothesis 5). Participants who reported that their job required them to display appropriate emotions also reported that their job required them to use the emotional abilities measured by the EARS. This relationship makes theoretical sense given the overlap between emotional labour and EI job requirements. Emotional labour has been said to involve “managing emotions” in oneself (i.e., Glomb, et al., 2004; Grandey, 2000), which overlaps with the EI ability of emotional management (i.e., the ability to regulate emotion in oneself and in others; Salovey et al., 2003).

According to the ability-based model of EI, emotional ability progresses from more basic processes (i.e., emotional perception) to more complex processes (i.e., emotional management; Mayer & Salovey, 1997). Based on this model, in order to be able to accurately manage emotions, one would first have to be able to perceive the emotions of others and have mastery over one’s own emotional expression (i.e., emotional perception); possess an understanding of the emotions and how they can impact others (i.e., emotional understanding); and know how to optimally use emotions to help oneself display appropriate emotions (e.g., thinking of something happy to try and stay positive; i.e., emotional facilitation). Therefore, if employees are required to manage

their own emotions when dealing with clients or customers, they would also be required to engage in, to some extent, emotional perception, emotional understanding, and emotional facilitation. Thus, it would be expected that emotional labour would be related to the EI requirements of jobs.

Finally, Hypothesis 6 addressed the moderating impact of emotional job requirements on the relationship between EI and job performance. It was expected that the relationship between EI and job performance would be stronger when the job requires a high degree emotional ability (as measured by the EARS). However, this hypothesis was not supported.

In all three sets of analyses, EI (as measured by the MSCEIT, WLEIS, and the SEIS) accounted for a significant amount of variance in job performance. This finding is consistent with other studies that suggest that employee EI is positively related to aspects of job performance (Feyerherm & Rice, 2002; Lopes et al., 2004; Lopes et al., 2005; Wong & Law, 2002; Wong et al., 2004). Moreover, the EARS accounted for additional variance in performance when the MSCEIT subscales and two scales of the WLEIS (facilitation and management) were entered in the first steps (i.e., WLEIS facilitation subscale and WLEIS management subscale). Examination of the zero-order correlation coefficients suggests that people who rate their job as requiring more EI (as measured by the MSCEIT and WLEIS facilitation and management subscales), also rate themselves as higher performers. Perhaps high performers are more cognizant of the EI requirements of their jobs, than those individuals who are poor performers. If high performers are in fact, more adept at identifying the EI requirements of their jobs, than only high performers should complete the EARS. Future research should examine this possibility further.

The EARS did *not* moderate the relationship between EI and job performance for any of the analyses. These results contradict Wong and Law (2002), who found that the relationship between EI and job performance is stronger when the job requires a high degree of emotional labour. These findings call into question the necessity of the EARS. That is, if employees perform systematically better when they possess high EI, then organizations would benefit from employing individuals with high EI regardless of the job, thus eliminating the need to assess EI job requirements.

This finding may, in part, be due to the sample use in this study. Although, I attempted to sample a wide-range of job incumbents, participants were recruited via the internet, and therefore required access to computers. This may have affected the extent to which a broad spectrum of job-incumbents could be accessed. In fact, the participants in this study were highly educated; over half of the participants (i.e., 59.0%) had begun or completed a university/college degree and an additional 21.4% of participants had begun or were completing a graduate level program (e.g., MSc, MBA, MEd, PhD, MD). Only one participant (out of 350) had not completed high school. It is possible that the interaction effect that was anticipated is only evident when jobs at both extremes of EI requirements are assessed (i.e., jobs that require extremely high EI and jobs that require extremely low EI).

Limitations and Future Research

There are several limitations of the present study that need to be addressed in order to guide future research. The sample of the study limited the extent to which the inter-rater reliability of the EARS could be tested both within job-incumbents (occupying the same job) and between job-incumbents and other job SMEs. For this initial validation

study, a sample of participants from diverse occupations was selected to ensure the results were generalizable. However, because of this occupational variety, no group of job-incumbents from any one profession was large enough to conduct inter-rater reliability analyses. Harvey (1991) posited that in order for a job analysis data to be valid, independent assessors must be able to generate equivalent ratings. Therefore, future validation studies should attempt to recruit samples of people from the same job to assess the inter-rater reliability of the EARS. Furthermore, only job incumbents were used to validate the EARS in this study. Although job incumbents generally provide the most accurate reports of job requirements; reports from immediate supervisors and management can also be valuable (Catano et al., 2005). Therefore, future research should validate this tool using managers in addition to job incumbents, and the inter-rater reliability between these two types of raters should be explored.

Although the EARS was designed to enhance objectivity of responses (i.e., use of BARS, instructions to assess the job and not individual performance), the EARS may be vulnerable to the shortcomings of a subjective measure. Therefore, future research should examine the susceptibility of the EARS to social desirability responding and also explore more objective measurement methods. Using a self-report measure is the most cost effective method of assessing job requirements and it enables collection of data from a large number of people. However, using a combination of multiple techniques is often recommended to ensure the most complete and accurate description of the job (Catano et al., 2005). Therefore, it may be prudent to use the EARS in conjunction with critical incidents techniques, standardized focus-groups, or interviews conducted with a smaller, but representative, sample of SMEs. It is also possible to use direct observation to

supplement the data from the EARS. Direct observation is often the most effective way to assess job requirements (Catano et al., 2005). However, in order to assess theoretical constructs, such as EI, it is necessary that these constructs be operationally defined. This may be difficult to do, it would be time consuming, and it would require highly trained assessors.

It should be noted that there are several difficulties associated with accurately measuring job performance. Pulakos (1997) notes that job performance ratings tend to be positively skewed and have low variability. It is logical that job performance measures tend to be high, given that selection systems are designed to select employees who have the skills and abilities necessary to perform their jobs well, and given that individuals who do not perform well often self-select out (Pulakos, 1997). Therefore, a job performance measure that tends to be positively skewed does not necessarily evoke concern. It is however, important to have variability in a job performance measure, in order for the job performance data to be useful in analyses (i.e., no range restriction). To ensure that there would be variability in reported job performance in this study, a 10-point scale ranging from 0-9 (instead of a 5-point or 7-point scale) was used. Although the majority of participants rated their performance between 5-9, there was normal variability within that range.

The job performance measure used in this study was self-report. Therefore, it is subjective and may be vulnerable to social desirability responding. In fact, Kuncel, Crede, and Thomas (2005) found that although self-report performance measures (i.e., academic grades) tend to be fairly accurate for individuals who actually have high performance, they are more inaccurate for individuals who have poor performance.

Kuncel et al. (2005) postulated that other self-report performance measures also may be susceptible to this pattern of responding. Therefore, it is possible that the self-report job performance measure used in this study contributed to the failure to see the anticipated interaction between employee EI, EI job requirements, and job performance (Hypothesis 6). Future studies should re-examine this relationship using a more objective measure of job performance.

The job performance measure in the current study was based on overall performance and interpersonal performance. Future research should examine the efficacy of using job performance measures that tap into job performance specific to the emotional ability requirements of jobs. For example, the job performance measure could include specific items that reflect the four factors of ability-based EI (e.g., “I provide constructive criticism to colleagues in a sensitive manner” and “I generally know what to say to make an angry customer/colleague feel better”). Ideally, future studies should look at including a performance measure that does not require self-report. Pulakos (1997) noted that performance appraisals in which trained raters use behavioural scales, such as behaviourally anchored rating scales (BARS) or behavioural observation scales (BOS), tend to yield valid and reliable job performance measurements.

The lower response rate for the MSCEIT is also an issue that should be addressed. This issue is most likely due to the fact that participants were re-directed to another site to complete the MSCEIT. After completing the all of the other measures, participants were informed the MSCEIT would take them an additional 30-45 minutes to complete and many participants may not have been willing to spend an additional 45 minutes after spending at least 30 minutes completing the first questionnaire. Other participants may

have planned to return to the site at a later time (which was an option), but did not. Alternatively, some people may have had difficulty accessing the site. The low response rate for the MSCEIT should not affect the results to a great extent. The only difference between the sample of people that completed the MSCEIT and the sample that did not complete the MSCEIT was that more females completed the MSCEIT. This is consistent with response-rate research, which suggests that females are more likely to complete surveys (Gannon, Nothorn, & Carroll, 1971). Although this difference was not large (i.e., 65% vs 48%), the slightly higher percentage of females may impact the external validity of the analyses that included the MSCEIT.

In order to understand the unique relationship between the EARS and other constructs (e.g., interpersonal job requirements, data-oriented job requirements, emotional labour, EI), it may be useful for future studies to control for several variables. For instance, demographic variables should not, theoretically, contribute to the prediction of EARS scores. However, in this study, there was a relationship between gender, age, education, and job experience and the EARS subscales. That is, participants who were female, were older, were highly educated, and had more seniority rated their jobs as requiring high EI. Therefore, EI job ratings could be impacted by these participant characteristics *or* these types of participants may hold jobs that require high EI. Future research should attempt to disentangle the impact of these demographic variables on EARS ratings.

In the present study the effects of personality and cognitive ability were not controlled. Landy (2005) suggested that when conducting a study that involves EI, it is favourable to include other related constructs, such as personality and cognitive ability.

Therefore, future research should examine the relationship between the EARS and study variables (i.e., interpersonal job requirements; data-oriented job requirements; emotional labour; EI; job performance) while controlling for these variables.

For the EARS to be practically useful in applied settings, future studies should benchmark the amount of job incumbent EI required for each level of EARS ratings. For example, EI benchmarks could be established by assessing the EI level of high performers (e.g., with the MSCEIT) who hold jobs that require various levels of emotional ability (e.g., EARS 1-5). These benchmarks could then be used when assessing job candidates during the selection process.

Finally, although not directly relevant to the hypotheses of this study, it should be noted that the self-report measures of ability-based EI (i.e., WLEIS, SEIS) did not correlate with the MSCEIT. Furthermore, the self-report measures and the MSCEIT behaved differently in their relationships with the EARS. Several other studies have reported the lack of relationship between the MSCEIT and the SEIS (Brackett & Mayer, 2003; Goldenberg et al., 2006). However, this is the first study to demonstrate the lack of relationship between the MSCEIT and the WLEIS.

Although these three measures are based on the same conceptualization of EI, they appear to be measuring different constructs. This difference has been attributed to the fact that the MSCEIT attempts to measure emotional ability performance, whereas the WLEIS and the SEIS are self-report measures (Goldenberg et al., 2006; Petrides & Furnham, 2001). However, it is imperative that future research continues to more clearly define the construct of EI and explore the efficacy of its measurement. If two different constructs exist, it is important that this is reflected in their nomenclature.

Conclusion

Given the recent attention devoted to EI as a predictor of job performance (e.g., Farnham, et al., 1996; Gibbs & Epperson, 1995; Neely-Martinez, 1997), and the increased use of EI for employee selection and training (e.g., Cherniss, 2005; Neely-Martinez, 1997), it is of paramount importance that organizations have a means by which to assess whether EI is important for performance in specific jobs. This study examined the reliability and validity of a new job analysis tool (i.e., the EARS) that has been developed to measure the emotional ability requirements of jobs.

The findings from the present study provide evidence for the internal reliability of the EARS and provide mixed evidence for the validity of the EARS. Although the theorized four-factor models of the EARS fit better than the one- and two-factor models, all three models had a poor fit, indicating that the EARS items may require revising. However, the EARS demonstrated strong convergent validity (in terms of its relationships with the Interpersonal Skills Score, Interpersonal Job Requirements, emotional labour, and some EI measures) and strong discriminant validity (in terms of its relatively weak relationship with data-oriented job requirements). Although it did not moderate the EI-performance relationship, it was correlated with job performance. Therefore, although the EARS requires more empirical validation to understand the full extent of its utility, it seems promising as a job analysis tool.

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Appendix A

EARS Original Version

***EMOTIONAL ABILITY RATING
SCALES:
TASK INSTRUCTIONS***

We would like you to **rate the abilities needed for your job**. Please consider your “official” job description as well as your own experience in the position. If no job description is available, please take a few minutes to think about your job as a whole and about the tasks required as part of your job.

Think about your work as a whole. Consider whether the work requires a very high level of emotional ability, a very low level, or a level of ability somewhere in between. Specific tasks within your job may require very different levels of emotional ability; do not consider specific tasks but think of your job as a whole and the level of emotional ability that you feel is required your work. You may refer back to the job description at any time during the rating procedure.

Do **not** rate the ability of people who have performed the work; rate the **level of the ability required overall for the work**.

There are 3 sections of questions about your job:

- (1) Please provide some **background information** about yourself and the job you are rating.
- (2) Please rate the **level of ability** required for your position.
- (3) Please rate the extent to which each ability is **important** to successful performance on the job; **how often** such behaviours are used on the job, and the extent to which these behaviours **distinguish between superior & average performance**.

Please contact Dr. Arla Day (902-420-5854; Arla.Day@smu.ca) if you have any questions or if you require clarification of the instructions.

Please read and answer all questions carefully.

Thank you very much for your cooperation and assistance for this phase of the research project.

**EMOTIONAL ABILITY RATING
SCALES
Section #1**

Date: _____
Day/Month/Year

Occupation: _____

Brief job description: _____

Number of years in job: _____

Age: _____ Gender: _____

Highest Level of Education Attained: _____

In order to link your responses from this scale to your on-line responses on the MSCEIT, please use a codeword consisting of the first 4 letters of your mother's maiden name & the day of your birth.

e.g.,

1 st 4 letters of mother's maiden name				Day of Birth	
J	O	N	E	1	6

Your codeword:

1 st 4 letters of mother's maiden name				Day of Birth	

Section #2 INSTRUCTIONS

The following 4 pages will help you in identifying the level of 4 types of emotional ability required for your job:

- On the left side of the scale are two definitions for the highest and lowest level of the ability:
 - 7= the work requires the highest level of this type of emotional ability
 - 1= the work only requires a low level of emotional ability.
- On the right side of the scale are examples of several behaviours that requiring different levels of this type of emotional ability (7 = high level; 1 = low level). These are generic tasks compiled as examples and do not necessarily reflect specific behaviours within your job.

Choose a value from the scale that best represents the level of emotional ability required in your job.

***EMOTIONAL ABILITY RATING
SCALES
Section #2***

1. Emotional Perception: the ability to perceive and correctly interpret emotions in faces, objects, art, and the environment

Emotional Perception is involved in knowing how coworkers will react, navigating important interpersonal interactions, reading non-verbal behaviours of other people, identifying emotional expressions in art and the environment, identifying whether someone is in a good or bad mood, and being able to detect “faking” of moods (i.e., dishonest expressions of feelings)

Think about the behaviours you perform as part of your job. Using the scale below as examples of emotional perception behaviours, to what extent does your job require these types of behaviours (or similar behaviours)? _____

Requires a detailed sensitivity to the facial expression and non-verbal behaviours of other people	7	⇒ Identifying a therapy client's true emotional state even when they actively attempt to hide their feelings
	6	
	5	⇒ Distinguishing among similar emotional states in colleagues (e.g., anger versus frustration).
	4	⇒ Identifying that a non-verbal critical care patient (e.g., a young child or a non-verbal stroke patient) is in pain.
	3	
Requires correct identification of repeated and very strong emotions	2	
	1	⇒ Identifying when someone is visibly, extremely angry.

2. Emotional Facilitation: the ability to use emotions to improve thought processes and reasoning, to harness feelings, and to employ them in ways that facilitate thinking

Emotional Facilitation involves generating moods for use in reasoning or in creative thought, and using emotions in communicating with another person.

Think about the behaviours you perform as part of your job. Using the scale below as examples of emotional facilitation behaviours, to what extent does your job require these types of behaviours (or similar behaviours)? _____

Requires an understanding of different emotions and an ability to use these ability to enhance decision making, thought, and productivity	7	⇒ Using anger/outrage to prepare an effective, persuasive closing statement in a legal trial.
	6	
	5	⇒ Knowing how to motivate subordinates, using different emotions based on each individual's unique requirements
	4	⇒ Knowing how to use humor effectively as a part of an advertising campaign to sell a product.
	3	
Requires use of basic emotions to enhance simple activities.	2	
	1	⇒ Using a harsh tone of voice to convey anger to other people or smiling and creating a happy mood to deliver good news.

3. Emotional Understanding: the ability to understand and anticipate how other people may feel and to relate these feelings to events and situations; it is the ability to understand how emotions may develop and change.

Emotional Understanding involves anticipating how others will react when good or bad things happen to them or when they receive good or bad news; understanding why some emotions may turn into anger; understanding that a person can experience many conflicting emotions simultaneously (e.g., jealousy, love, guilt, anger); anticipating how specific situations may trigger certain emotions.

Think about the behaviours you perform as part of your job. Using the scale below as examples of emotional understanding behaviours, to what extent does your job require these types of behaviours (or similar behaviours)? _____

Requires an ability to understand how emotions can change and evolve, and an ability to <u>anticipate</u> how others may feel in specific situations	7	⇒ Anticipating that the wife of your patient who has been suffering from a long illness may experience a range of conflicting emotions (e.g., sorrow, fear, contentment, relief, depression, etc.) upon his death.
	6	
	5	
	4	⇒ Anticipating that your coworker may be disappointed, envious, and/or angry that only you received a raise.
	3	
Requires a basic understanding of emotions	2	⇒ Understanding that a mild criticism to someone who is unhappy may trigger extreme negative reactions.
	1	⇒ Recognizing that your subordinate may feel sad and angry when they receive a poor performance appraisal.

4. Emotional Management: the ability to be able to control/manage emotions in oneself and in others; it is the ability to be open to feelings, without letting feelings overwhelm oneself

Emotional Management involves knowing your own emotions, but staying in control of them (which does not mean “repressing them”); controlling extreme emotions, even when the emotions are “justified”, and being able to helping others feel better even if you are in a bad mood yourself.

Think about the behaviours you perform as part of your job. Using the scale below as examples of emotional management behaviours, to what extent does your job require these types of behaviours (or similar behaviours)? _____

Requires an ability to manage one's own emotions and help to shape other people's emotions. Being aware of, and open to, all of your own emotions.	7	⇒ Helping to cheer up an employee whose employment is terminated, even though you are feeling depressed and experiencing your own substantial work and personal problems.
	6	⇒ Controlling your own feelings of hurt and anger, while continuing to be polite to a customer who is being rude, demeaning, and verbally abusive.
	5	
	4	⇒ Delivering necessary work-related criticism to a subordinate in a sensitive and effective manner.
	3	
Requires modest control of extreme emotions and the ability to understand your own basic, strong emotions.	2	
	1	⇒ Being in touch with your own basic emotions (e.g., being able to know when you are in a very good or very bad mood.) ⇒ Refraining from criticizing a coworker's personal character to avoid hurting his or her feelings.

**EMOTIONAL ABILITY RATING
SCALES
Section #3**

Using the definitions of each of the four Emotional Abilities from the previous pages, please indicate the extent to which each ability is *important* to successful performance on the job; *how often* such behaviours are used on the job, and the extent to which these behaviours *distinguish* between superior & average performance.

Importance

- the extent to which each ability is important to the successful performance of your job.

N/A	1	2	3	4	5
Ability is not applicable	Very minor importance	Low importance	Average Importance	High Importance	Extreme Importance

Frequency

- the extent to which each ability is used to perform your job

N/A	1	2	3	4	5
Ability is not applicable	Almost never	Seldom	Occasionally	Frequently	Almost all of the time

Superior Performance

- the extent to which each ability distinguishes between superior and adequate performers

N/A	1	2	3	4	5
Ability is not applicable	Very little	Somewhat	Moderately	Considerably	To a great degree

Ability	Importance	Frequency	Superior Performance
Emotional Perception <ul style="list-style-type: none"> • the ability to perceive & correctly interpret emotions in faces, objects, art, & the environment 			
Emotional Understanding <ul style="list-style-type: none"> • the ability to use emotions to improve thought processes & reasoning, to harness feelings and to employ them in ways that facilitate thinking 			
Emotional Facilitation <ul style="list-style-type: none"> • the ability to understand & anticipate how other people may feel & to relate these feelings to situations; the ability to understand how emotions may develop & change. 			
Emotional Management <ul style="list-style-type: none"> • the ability to be able to control/manage emotions in oneself & in others; the ability to be open to feelings, without letting feelings overwhelm oneself 			

Appendix B

EARS Validated Version (as presented on the web)

In the next section we would like you to **rate the abilities needed for your job**.

Please consider your "official" job description as well as your own experience in the position. If no job description is available, please take a few minutes to think about your whole job and about the tasks required as part of your job.

Think about your work as a whole. Consider whether the work requires a very high level of emotional ability, a very low level, or a level of ability somewhere in between. Specific tasks within your job may require very different levels of emotional ability; do not consider specific tasks but think of your job as a whole and the level of emotional ability that you feel is required your work. You may refer to your job description at any time during the rating procedure.

DO NOT rate the ability of people who have performed the work; rate the level of the ability required overall for the work.

Please contact Dr. Arla Day (902-420-5152; Arla.Day@smu.ca) or Sonya Melnyk (902-420-5152; sonya.melnyk@smu.ca) if you have any questions or if you require clarification of the instructions.

The following 4 pages will help you in identifying the level of 4 types of emotional ability required for your job.

Each page provides you with the definition of a different emotional ability. To help you understand this ability better we provide you with examples of several behaviours that require different levels of each type of emotional ability: 5 = high level, 1 = low level.

These are generic tasks compiled as examples and DO NOT necessarily reflect specific behaviours within your job.

You will be asked to choose a value from the scale (1-5) that best represents the level of emotional ability required in your job.

After rating the extent to which each of these abilities it required for your job you will also be asked about how each ability is important to successful performance on the job; how often such behaviours are used on the job, and the extent to which these behaviours distinguish between superior & average performance. PLEASE READ AND ANSWER ALL QUESTIONS CAREFULLY.

EMOTIONAL UNDERSTANDING: The ability to understand how emotions may develop and change.

DEFINITION: *Emotional Understanding involves anticipating how others will react when good or bad things happen to them or when they receive good or bad news; understanding why some emotions may turn into anger; understanding that a person can experience many conflicting emotions simultaneously (e.g., jealousy, love, guilt, anger); anticipating how specific situations may trigger certain emotions.*

How much EMOTIONAL UNDERSTANDING does your job require?

The scale below presents EXAMPLES. (These examples DO NOT necessarily reflect specific behaviours within your job.)

- LOW= [1]** Recognizing that your coworker may feel sad and angry when s/he receives a poor performance appraisal.
- [2] Anticipating that your coworker may be disappointed, envious, and/or angry that only you received a raise.
- [3] Understanding that a mild criticism to someone who is unhappy may trigger extreme negative reactions.
- [4] After hearing frustrating news, realizing that your negative mood may effect your subsequent reactions and judgment.
- HIGH=[5]** Anticipating that the wife of a man who has been suffering from a long illness may experience a range of conflicting emotions (e.g., sorrow, fear, contentment, relief, depression, etc.) upon his death.

Note: A rating of **1** on this scale requires a basic understanding of emotions; a rating of **5** on this scale requires an ability to understand how emotions can change and evolve, and an ability to anticipate how others may feel in specific situations

Using the five point scale as a guideline, to what extent does your job require EMOTIONAL UNDERSTANDING?

EMOTIONAL PERCEPTION: The ability to perceive emotions in faces, art, and the environment.

DEFINITION: *Emotional Perception is involved in knowing how coworkers will react, navigating important interpersonal interactions, reading non-verbal behaviours of other people, identifying emotional expressions in art and the environment, identifying whether someone is in a good or bad mood, and being able to detect "faking" of moods (i.e., dishonest expressions of feelings).*

How much EMOTIONAL PERCEPTION does your job require?

The scale below presents EXAMPLES of emotional perception behaviours. (These examples DO NOT necessarily reflect specific behaviours within your job.)

LOW= [1] Recognizing anger when someone explicitly states that s/he is mad.

[2] Identifying when someone is visibly, extremely angry.

[3] Identifying when a nonverbal individual (e.g., a young child or nonverbal stroke patient) is in pain.

[4] Distinguishing among similar emotional states in colleagues (e.g., anger vs frustration).

HIGH=[5] Identifying a client's true emotional state even when s/he actively attempts to hide his or her feelings.

Note: A rating of **1** on this scale requires correct identification of repeated and very strong emotions; a rating of **5** on this scale requires a detailed sensitivity to the facial expression and non-verbal behaviours of other people.

Using the five point scale as a guideline, to what extent does your job require EMOTIONAL PERCEPTION?

EMOTIONAL MANAGEMENT: the ability to control/manage emotions in oneself and others

DEFINITION: *Emotional Management involves knowing your own emotions, but staying in control of them (which does not mean "repressing them"); controlling extreme emotions, even when the emotions are "justified", and being able to helping others feel better even if you are in a bad mood yourself.*

How much EMOTIONAL MANAGEMENT does your job require?

The scale below presents EXAMPLES of emotional management behaviours. (These examples DO NOT necessarily reflect specific behaviours within your job.)

LOW= [1] Being in touch with your own basic emotions (e.g., being able to know when you are in a very good or very bad mood

[2] Refraining from criticizing a coworker's personal character to avoid hurting his or her feelings.

[3] Delivering necessary work-related criticism to a subordinate in a manner that is motivating.

[4] Controlling your own feelings of hurt and anger, while continuing to be polite to a customer who is being rude and verbally abusive.

HIGH=[5] Helping to cheer up an employee whose employment is terminated, even though you are feeling depressed and experiencing your own substantial work and personal problems.

Note: A rating of **1** on this scale requires modest control of extreme emotions and the ability to understand your own basic, strong emotions; a rating of **5** on this scale requires an ability to manage one's own emotions and help to shape other people's emotions. Being aware of, and open to, all of your own emotions.

Using the five point scale as a guideline, to what extent does your job require EMOTIONAL MANAGEMENT?

EMOTIONAL FACILITATION: the ability to use emotions to improve thought processes and reasoning.

DEFINITION: *Emotional Facilitation involves generating moods for use in reasoning or in creative thought, and using emotions in communicating with another person.*

How much EMOTIONAL FACILITATION does your job require?

The scale below presents EXAMPLES of emotional facilitation behaviours. (These examples DO NOT necessarily reflect specific behaviours within your job.)

LOW= [1] Using a harsh tone of voice to convey anger to other people, or smiling and creating a happy mood to deliver good news.

[2] Using humour effectively as a part of an advertising campaign to sell a product.

[3] Refocusing feelings of disappointment from negative client feedback to motivate you to work harder.

[4] Using specific emotions (e.g., anger, outrage, sense of injustice) to prepare an effective, persuasive argument for a legal trial.

HIGH=[5] Regardless of your own emotions, generating different emotions to motivate subordinates based on each individual's unique requirements.

Note: A rating of **1** on this scale requires use of basic emotions to enhance simple activities; a rating of **5** on this scale requires an understanding of different emotions and the ability to use these to enhance decision making, thought, and productivity.

Using the five point scale as a guideline, to what extent does your job require EMOTIONAL FACILITATION?

Using the definitions of each of the four emotional abilities, please indicate the extent to which each ability is important to successful performance on the job; how often such behaviours are used on the job, and the extent to which these behaviours distinguish between superior & average performance.

EMOTIONAL PERCEPTION - the ability to perceive & correctly interpret emotions in faces, objects, art, & the environment

EMOTIONAL UNDERSTANDING - the ability to use emotions to improve thought processes & reasoning, to harness feelings and to employ them in ways that facilitate thinking

EMOTIONAL FACILITATION - the ability to understand & anticipate how other people may feel & to relate these feelings to situations; the ability to understand how emotions may develop & change.

EMOTIONAL MANAGEMENT - the ability to be able to control/manage emotions in oneself & in others; the ability to be open to feelings, without letting feelings overwhelm oneself.

	Importance	Frequency	Superior Performance
Perception			
Understanding			
Facilitation			
Management			

PLEASE NOTE:

The options for the importance, frequency, and superior performance scales were available in pull down bars and were as follows:

IMPORTANCE: very low importance, low importance, average importance, high importance, extreme importance

FREQUENCY: almost never, seldom, occasionally, frequently, all the time

SUPERIOR PERFORMANCE: very little, somewhat, moderately, considerable, to a great degree

Appendix C

Summary of O*NET SME Ratings

Below is a list of skills and work activities. I am interested in which ones you think require emotional intelligence (Mayer, Salovey, and Caruso model). Please type either, yes, no, or maybe in the column next to each item. The definitions of the four emotional abilities are provided on the last page to facilitate the rating of these items. **THANKS! (NOTE: items denoted with * were used)**

Yes=2, Maybe=1, No=0	SKILL OR WORK ACTIVITY
No, yes, yes, yes, yes, no	*Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
Maybe, yes, maybe, maybe, yes, yes	*Coordination — Adjusting actions in relation to others' actions
Maybe, yes, yes, maybe, yes, maybe	*Instructing — Teaching others how to do something.
Yes, yes, yes, yes, yes, yes, yes	*Negotiation — Bringing others together and trying to reconcile differences.
Yes, yes, yes, yes, yes, yes, yes	*Persuasion — Persuading others to change their minds or behavior.
Maybe, no, maybe, yes, yes, yes, maybe	*Service Orientation — Actively looking for ways to help people.
Yes, yes, yes, yes, yes, yes, yes	*Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.
Yes, yes, yes, yes, yes, yes, yes	*Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.
No, no, maybe, maybe, no, no, no	Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences.

No, yes, maybe, yes, maybe, no, maybe	Oral Expression — The ability to communicate information and ideas in speaking so others will understand.
No, maybe, yes, yes, maybe, yes, maybe	*Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
Yes, yes, maybe, yes, yes, yes, yes	*Assisting and Caring for Others — Providing personal assistance, medical attention, emotional support, or other personal care to others such as coworkers, customers, or patients.
Maybe, yes, maybe, maybe, no, no, maybe	Training and Teaching Others — Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.
Maybe, yes, yes, yes, yes, yes, maybe	*Coaching and Developing Others — Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills.
Yes, yes, yes, yes, yes, yes, yes	*Resolving Conflicts and Negotiating with Others — Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.
Yes, yes, yes, yes, yes, maybe, yes	*Guiding, Directing, and Motivating Subordinates — Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
Yes, yes, yes, yes, yes, yes	*Developing and Building Teams — Encouraging and building mutual trust, respect, and cooperation among team members.
Maybe, yes, yes, maybe, no, maybe	Coordinating the Work and Activities of Others — Getting members of a group to work together to accomplish tasks.
Maybe, no, yes, yes, yes, maybe	*Communicating with Persons Outside Organization — Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
Yes, yes, maybe, yes, yes, yes	*Selling or Influencing Others — Convincing others to buy merchandise/goods or to otherwise change their minds or actions.

Emotional Perception: the ability to perceive and correctly interpret emotions in faces, objects, art, and the environment

Emotional Perception is involved in knowing how coworkers will react, navigating important interpersonal interactions, reading non-verbal behaviours of other people, identifying emotional expressions in art and the environment, identifying whether someone is in a good or bad mood, and being able to detect “faking” of moods (i.e., dishonest expressions of feelings)

Emotional Facilitation: the ability to use emotions to improve thought processes and reasoning, to harness feelings, and to employ them in ways that facilitate thinking

Emotional Facilitation involves generating moods for use in reasoning or in creative thought, and using emotions in communicating with another person.

Emotional Understanding: the ability to understand and anticipate how other people may feel and to relate these feelings to events and situations; it is the ability to understand how emotions may develop and change.

Emotional Understanding involves anticipating how others will react when good or bad things happen to them or when they receive good or bad news; understanding why some emotions may turn into anger; understanding that a person can experience many conflicting emotions simultaneously (e.g., jealousy, love, guilt, anger); anticipating how specific situations may trigger certain emotions.

Emotional Management: the ability to be able to control/manage emotions in oneself and in others; it is the ability to be open to feelings, without letting feelings overwhelm oneself

Emotional Management involves knowing your own emotions, but staying in control of them (which does not mean “repressing them”); controlling extreme emotions, even when the emotions are “justified”, and being able to helping others feel better even if you are in a bad mood yourself.

Appendix D

Interpersonal Job Requirements Scale

Please indicate the extent to which each of the following skills is important to successful performance on the job and how often such behaviours are used on the job.

IMPORTANCE: the extent to which each skill is important to the successful performance of your job.

FREQUENCY: the extent to which each skill is used to perform your job.

	Importance	Frequency
PERSUADING - using rational or emotional arguments to influence someone		
COACHING - providing personal assistance, instruction and/or encouragement		
DIVERTING - intentionally trying to lighten a situation by distracting people		
CONSULTING - providing technical knowledge and professional advice		
INSTRUCTING - teaching new information to an individual or group		
TREATING - providing therapeutic services to a client or a patient		
SUPERVISING (overseeing the work and performance of others)		
NEGOTIATING - discussing an issue with the goal of coming to an agreement/settlement		
MENTORING - using expert knowledge to provide trusted advice and guidance		
LEADING - setting clear direction for a team and inspiring/motivating them to achieve goals		
ADVISING - providing advice on appropriate courses of action to prevent/solve problems		
INTERVIEWING - attaining specific information through consultation with an individual		
PUBLIC SPEAKING (making formal presentations)		
ENTERTAINING - personally provide entertainment to others (e.g., actor/comedian)		
SERVING/CATERING - providing a tangible service -NOT services such as counseling		

PLEASE NOTE:

The options for the importance and frequency scales were available in pull down bars and were as follows:

IMPORTANCE: very low importance, low importance, average importance, high importance, extreme importance.

FREQUENCY: almost never, seldom, occasionally, frequently, all the time

Appendix E

Data-oriented Job Requirements Scale

Please indicate the extent to which each of the following skills is important to successful performance on the job and how often such behaviours are used on the job.

IMPORTANCE: the extent to which each skill is important to the successful performance of your job.

FREQUENCY: the extent to which each skill is used to perform your job.

	Importance	Frequency
COMPARE - judge whether things are similar or different from prescribed standards		
COPY - transcribe data OR make things while following a template		
COMPILE - collect and categorize information		
ANALYZE - study and evaluate information		
SHORT-TERM MEMORY - hold information in memory for up to 30 minutes		
WRITE - compose written materials		
READ - read written materials		
TYPE - use keyboarding devices to perform word processing activities		
HANDLE - manual work (e.g., cut, assemble, move) with objects or materials		
PRECISION WORK - manual work that requires great accuracy and precision		
OPERATE MACHINERY - stop, start, or operate electronically powered machines		

PLEASE NOTE:

The options for the importance and frequency scales were available in pull down bars and were as follows:

IMPORTANCE: very low importance, low importance, average importance, high importance, extreme importance.

FREQUENCY: almost never, seldom, occasionally, frequently, all the time

Appendix F

Job Performance Measure

1. Compared your colleagues who are in the same occupation as you how would you rate your own **overall performance**?
2. How would your **colleagues** rate your overall performance?
3. How would your **supervisors** rate your overall performance?
4. What was your rating on your last **performance appraisal**?
5. How would you rate yourself as a **team player**?
6. How would you rate your **relationship with your colleagues**?
7. How would you rate your **relationship with your supervisor**?

Appendix G

Number of Participants who were Employed in Various O*NET Job Categories

	O*NET Job Category	Frequency
1.	Accountant	2
2	Actor	1
3	Administrative Services Manager	3
4	Adult Literacy, Remedial Education, and GED Teacher	1
5	Advertising and Promotions Manager	4
6	Advertising Sales Agent	1
7	Animal Trainer	1
8	Architectural Drafter	1
9	Bookkeeping, Accounting, & Auditing Clerk	8
10	Budget Analyst	1
11	Bus Driver, Transit and Inner City	2
12	Cabinetmakers and Bench carpenter	2
13	Cargo and Freight Agent	1
14	Cashier	1
15	Chefs and Head Cook	3
16	Child Care Worker	3
17	Child, Family and School Social Worker	3
18	Civil Engineering Technician	1
19	Civil Engineer	2
20	Combined Food Preparation and Serving Worker	3
21	Compensation and Benefits Manager	1
22	Compensation, Benefits and Job Analysis Specialist	1
23	Computer Hardware Engineer	1
24	Computer Operator	1
25	Computer Programmer	8
26	Computer Software Engineer, Systems Software	2
27	Computer Software Engineer, Applications	2
28	Computer Support Specialist	5
29	Computer Systems Analyst	1
30	Construction Labourer	1
31	Cook, Short Order	1
32	Counter and Rental Clerk	1
33	Couriers and Messenger	1
34	Criminal Investigator and Special Agent	1
35	Customer Service Representative	5
36	Data Base Administrator	2
37	Data Entry Keyer	2
38	Dental Hygienist	1
39	Desktop Publisher	1

	O*NET Job Category	Frequency
40	Editor	1
41	Educational, Vocational, and School Counselor	1
42	Electrical Engineer	1
43	Electrical Engineering Technician	2
44	Electrician	1
45	Elementary School Teacher	6
46	Emergency Medical Technicians and Paramedics	1
47	Engineering Manager	1
48	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic, and Glass Fibers	1
49	Family and General Practitioner	1
50	Farmer and Rancher	2
51	Farmer and Rancher	2
52	First-line Manager of Mechanics, Installers, and Repairers	1
53	First-Line Supervisor/Manager- Construction Trades Workers	1
54	First-Line Supervisor, Administrative Support	1
55	First-Line Supervisor/Manager of Food Preparation and Serving Workers	1
56	First-Line Supervisor/Manager of Retail Sales Workers	4
57	Fitness Trainers and Aerobics Instructor	2
58	Floral Designer	1
59	Food Science Technician	1
60	Food Services Manager	1
61	Foreign Language Literature Teacher, Postsecondary	1
62	General and Operations Manager	13
63	Government Service Executive	1
64	Graduate Teaching Assistant	1
65	Hairdressers, Hairstylists, and Cosmetologist	2
66	Historian	1
67	Home Health Aide	2
68	Industrial Engineer	3
69	Industrial Production Manager	1
70	Industrial Organizational Psychologist	1
71	Instructional Coordinators	1
72	Insurance Sales Agents	2
73	Insurance Underwriter	2
74	Interpreter and Translator	1
75	Janitor and Cleaner	1
76	Loan Officer	1
77	Lodging Manager	1
78	Logging Tractor Operator	1
79	Maintenance Repair Worker	2
80	Management Analyst	2
81	Massage Therapist	1

	O*NET Job Category	Frequency
82	Mechanical Drafter	1
83	Medical and Clinical Laboratory Assistant	1
84	Medical Health Services Manager	1
85	Medical Public Health Social Worker	2
86	Medical Scientist	2
87	Medical Secretary	1
88	Mental Health Counselor	2
89	Merchandise Displayers and Window Trimmers	1
90	Metal Molding, Coremaking, Casting Machine Operators and Tenders	1
91	Middle School Teacher	4
92	Network and Computer Systems Administrator	2
93	New Accounts Clerk	1
94	Non-farm Animal Caretakers	1
95	Office Clerk	7
96	Painters, Construction, and Maintenance	1
97	Paralegals and Legal Assistants	2
98	Personal and Home Care Aide	1
99	Personal Financial Advisor	3
100	Pharmacy Technicians	1
101	Physical Therapist	1
102	Plumber	1
103	Police Detective	1
104	Police Patrol Officer	2
105	Police, Fire, and Ambulance Dispatcher	1
106	Postal Service Mail Carrier	1
107	Preschool Teacher	1
108	Private Sector Executive	1
109	Producer	1
110	Production Labourer	1
111	Production, Planning ,and Expediting Clerk	1
112	Program Director	1
113	Property, Real Estate and Community Association Manager	1
114	Psychiatric Technician	1
115	Psychology Teacher, Post-Secondary	1
116	Public Relations Manager	1
117	Public Relations Specialist	1
118	Real Estate Sales Agent	3
119	Receptionist and Information Clerk	1
120	Registered Nurse	5
121	Reservation and Transportation Ticket Agent	1
122	Retail Sales Person	3
123	Sales Manager	2
124	Secondary School Teacher	1
125	Secretary (except legal, medical, executive)	12

	O*NET Job Category	Frequency
126	Security Guard	2
127	Service Station Attendant	1
128	Sheet Metal Worker	1
129	Shipping, Receiving, and Traffic Clerk	1
130	Social and Human Service Assistant	1
131	Special Education Teacher – Middle School	2
132	Stock Clerk- Sales Floor	4
133	Stock Clerk -Stockroom, Warehouse, or Storage Yard	2
134	Storage and Distribution Manager	1
135	Teacher Assistant	4
136	Technical Writer	2
137	Telecommunications line installers and repairers	1
138	Teller	1
139	Tool and Die Maker	2
140	Training and Development Specialist	2
141	Travel Agent	1
142	Truck Driver, Light or Delivery Services	2
143	Veterinary Technician	1
144	Vocational Education Teacher, Postsecondary	2

Appendix H

REB Certificate of Approval (05-128)